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Impact of Digitalization on Insurance Industry: a case of a Portuguese insurance company

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Biographic Note

Manuel Reis Porto Guedes was born on the 20th April 1997 in Porto, Portugal.

Manuel joined FEP – Faculdade de Economia do Porto – in 2015 to undertake the bachelor's in Management, which he successfully completed in 2018. He wanted to go further, and in that same year he applied for the Master programme in Management in the same university, which he was successful admitted to.

Along this path, Manuel experienced the Erasmus + Program in IÈSEG Lille, France, during his bachelor's degree.

He was involved in several sports and organizational strands. He made part of the masculine futsal team that became the national university champions and got an honourable 3rd place in the university European, disputed in Turkey. Manuel was also involved in several activities such as Open Day – FEP, and University of Porto – Exhibition.

After finishing the first year of his master's degree, in 2019, Manuel decided to begin his professional career with a curricular internship at Real Vida Seguros, a Porto-based insurance company, for 8 months, ending in April of 2020. During that time, he was allocated to the company's Planning and Innovation Office.

Acknowledgments

Abstract

Digitalization and digital transformation of companies and industries are no longer a novelty. Nowadays, companies are adapting to this new reality, which is being spread amongst industries, some faster than others. The insurance sector is an example of an industry where digitalization has not reached its peak yet, having however a huge potential. Real Vida Seguros, an insurance Portuguese company, is currently resorting to digitalization projects in its agenda. Thus, this internship report aims to understand what the impacts of digitalization of business processes are, as well as the impacts of online purchase in customer interaction. The report is framed within a curricular internship in the Planning and Innovation Department of Real Vida Seguros, focusing on these digital implementation. In order to reach those goals, a qualitative and quantitative research was developed. Three semi-structured interviews to company employees were performed to analyse the impact of digitalization of business processes. In addition, the previous and current business process the company operates was modelled using the BPMN 2.0 technique to aid its understanding, and secondary data such as the company sales was used. Regarding the quantitative research, a survey was developed to help understand the impact of online purchase on customer interaction. The findings from the first part of the study revealed what the main impacts of the digitalization of business processes were: resource release at several levels, its reallocation, which in case of employees is done accordingly to their skills, cost efficiency, changes on Agents and brokers' business and also sales increase. From the second part of the study it was disclosed that age is a significant predicator of online purchase. It was also revealed that most of the customers privilege an online experience over a traditional one and that a positive customer experience leads to a repurchase intention. Despite thinking that perceived product complexity influences online purchases, customers do not create the need of professional counselling when purchasing an insurance product. In contrast to customers who had never purchased online before Real Vida Condutor, those who had considered the process safer and simpler.

Keywords: digitalization, insurance industry, business processes, customer interaction
JEL-codes: M310, M150, M190

Resumo

A digitalização e transformação digital de empresas e indústrias já não é uma novidade. Atualmente, as empresas estão a adaptar-se a esta nova realidade, que se espalha pelas diferentes indústrias, a diferentes velocidades. O setor segurador é um exemplo de uma indústria onde a digitalização não atingiu ainda o seu potencial. A Real Vida Seguros é uma seguradora portuguesa que já conta na sua agenda o desenvolvimento de projetos de digitalização. Deste modo, este relatório de estágio tem como objetivo perceber quais são os impactos da digitalização dos processos de negócio e os impactos da digitalização, mais concretamente da compra online, na interação com o consumidor. Este relatório está enquadrado num estágio curricular no departamento de Planeamento e Inovação da Real Vida Seguros, com foco nesta implementação digital. De forma a atingir estas metas foram desenvolvidos dois estudos, qualitativo e quantitativo. Foram realizadas três entrevistas semiestruturadas a funcionários da empresa de forma a analisar o impacto da digitalização dos processos de negócio. Para além disso, tanto o processo de negócio anterior como o atual da empresa foram modelados através da técnica BPMN 2.0 de forma a torná-lo mais percetível. Os dados secundários como as vendas da empresa foram também analisados. No que diz respeito ao estudo quantitativo, foi desenvolvido um questionário de modo a perceber qual o impacto da compra online na interação com o cliente. Os resultados do primeiro estudo revelaram quais os principais impactos da digitalização dos processos de negócio: libertação de recursos a vários níveis, a sua realocação, que no caso de recursos humanos é feito de acordo com as suas competências, eficiência de custos, alterações no negócio dos agentes e corretores e, também, aumento das vendas. Da segunda parte do estudo, concluiu-se que a idade é um importante influenciador da compra online. A maior parte dos consumidores revelou uma preferência por uma experiência online a uma realizada num canal tradicional. A intenção de recompra por parte dos consumidores deveu-se a uma boa experiência de compra. Estes consideram que a complexidade de um produto influencia a compra online e, apesar disso, não sentiram necessidade de serem aconselhados aquando da compra de um seguro. Contrariamente aos consumidores que nunca tinham comprado online, aqueles que já o fizeram consideram o processo mais simples e seguro.

Palavras-chave: digitalização, indústria seguradora, processos de negócio, interação com o cliente

Códigos-JEL: M310, M150, M190

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1. Introduction

The insurance sector is witnessing a major change given that companies are focusing sharply on digitalization. This concept has been somewhat consensual among several authors, as it resorts to the use of digital technologies alongside digitized data to improve companies' business areas such as business processes and it also creates new market prospects and dividend increase (Brennen & Kreiss, 2016; Eling & Lehmann, 2018; Gobble, 2018b; Imgrund, Fischer, Janiesch, & Winkelmann, 2018; Roeglinger, Denner, & Püschel, 2017; Savić, 2019). In fact, improvements on business processes can be seen as digitalization if one of the goals is to make them more efficient and if it resorts to the use of digital technologies (Albrecher et al., 2019). After performing some research, it was concluded that the investigation about digitalization on the insurance industry and its literature was scarce (Eling & Lehmann, 2018). The main distribution channel of the insurance sector are Agents and brokers. In 2018, 94% of the insurance sales in Portugal were carried out by this traditional sales channel – (Seguradores, 2019, October) - revealing its great importance as a distribution channel. In the digital age we live in, the internet comes as an unavoidable medium for displaying strategies, although it is still in its early stages to become a booming sales channel, as it currently accounts for a low percentage of sales. However, even though the direct sales are not closed on the internet, they often begin through this channel and are done through or even accounted for on other channels of distribution - Agents, telephone, among others. This approach is known as omni-channel approach (Young Kim & Kim, 2004), or as Eling and Lehmann (2018) refers to - ROPO, Research Online, Purchase Offline-. This digital approach is becoming essential for many companies as it balances the role of the intermediary or at least decreases its importance. There are differences in the context of the online and offline purchase as explained by Rose, Hair, and Clark (2011). The personal interaction, among other characteristics present different features or are even non-existent. These differences aid in understanding the difference between Online and Offline Customer experience and also to perceive the different ways of interaction between customers and companies.

Within this context, an internship was performed at Real Vida Seguros, an independent Portuguese insurance company founded in 1989. Real's market share is not so high when compared to some other - major - insurance companies in Portugal. It nearly represents 1% of the Portuguese overall market - life and non-life insurance sectors. Even though the company keeps a small market share, it generates a competitive advantage, as contradictory as

this may sound, the reason being the large number of decision layers bigger companies must go through when an implementation occurs. Besides that, there are other factors such as legal and international guidelines – some Portuguese insurances depend on third parties, as their major shareholders are foreigners. Real's light architecture allows it to promptly implement changes and quickly make decisions as compared to bigger insurance companies. Given the high competitiveness the Portuguese insurance industry is characterized for, it is essential that the insurer follows the digitalization trend in order to get some competitive advantage. Real, rethought its strategy and decided to start implementing digitalization - including digitalization of business processes, from which, during the internship some projects regarding these topics were taken. Therefore, these projects are analysed for the purpose of this report. As mentioned before, the objective of this research is to analyse the impact of digitalization in the insurance company. In order to do that two research questions (RQ) were framed:

1- What are the impacts of digitalization of business processes?

2- What are the impacts of digitalization on the customer interaction?

The data that used on this study was collected during and after the internship. For the first RQ, a business process was modelled using BPMN 2.0 to aid understanding the previous and current insurance policy issuance system by Agents and brokers. Then, semi-structured interviews were performed to company employees to understand the impact of the implementation of this new process. In addition, secondary data of the company namely sales were analysed. For the second RQ, a survey was directed to customers that had purchased a product of Real Vida Seguros directly from the internet.

In addition to this section, the report is structured as follows. The second and therefore next section is focused on a Literature Review of the topic, about Business processes, its improvement methods, as well as modelling and its techniques. Beyond that, the distinction between several authors' definitions on digitalization engaging concepts is presented and to be related to the improvement of business processes and its approaches. Then, the distribution channels insurance companies have at their disposal are presented with a special emphasis on the internet channel and the specificities of its adoption on the insurance industry. Customer experience is reviewed in what regards the online and offline context and their main differences, representing an important matter to customer interaction. Later, the insurance company where the internship took place is described, and the objective of the internship explored. The following sections include the method used in the study, results presentation, and a conclusion including a description of the results and study limitations.

2. Digitalization of Business Processes

2.1 Business Processes

The relevance of business processes was first brought out in the decade of 1960 by Levitt. However, only in the last decade of the previous millennium their truly magnitude was indeed explored (Aguilar-Savén, 2004). The investigations of several authors in business processes, such as Hammer (1990), Harrington (1991) and Davenport (1993), were fundamental for the development and redesign of this area.

Business processes represent the behaviour of a company (Aguilar-Savén, 2004). Given that processes can plainly express and refer to the planned objectives of the business crossing functional limits, the process view has backgrounded the traditional functional view of an enterprise (Laden Aldin & de Cesare, 2011), providing a dynamic overview of the company opposed to a static view (Damij, 2007). Business process helps to manage the organizations' operations to deliver value-added outputs (Abijith, Fosso Wamba, & Gnanzou, 2013). The process boundaries are settled by the entry and exit spots of inputs and outputs, where the relationship between the process and the surrounding ecosystem is created athwart the inputs and outputs (Damij, 2007). According to several authors and based on what was found in the literature, different definitions of "Business Process" are presented in Table 1 below. The definition is fairly consensual between the authors, where essentially inputs are converted into outputs through a number of activities, and processes are driven by the interactivity between inputs and outputs (Aguilar-Savén, 2004). Besides this definition, Aguilar-Savén (2004); L Aldin and de Cesare (2009); Melão and Pidd (2000); Mooney, Gurbaxani, and Kraemer (1996) also make the distinction between core and support business processes. Core business processes, also known as primary processes, represent the company value-chain, delivering value to external customers. Support business processes or secondary processes enable the core processes to be accomplished by fostering the right conditions, as resources or infrastructure, providing value to internal customers. Furthermore, management processes play an important role leading the organization through strategies, planning, and controlling them.

Table 1: Business process definition

Author (year)	Definition of Business Process
Hammer and Champy (1993, p. 38)	"…collection of activities that takes one or more kinds of input and creates an output that is of a value to the customer."

Aguilar-Savén (2004, p. 133)	"A business process is related to the enterprise, as it defines the way in which the goals of the enterprise are achieved."
Laguna and Marklund (2013, p. 9)	"A business process is a network of connected activities and buffers with well-defined boundaries and precedence relationships, which utilize resources to transform inputs into outputs for the purpose of satisfying customer requirements."
Davenport (1993, p. 5)	"…is simply a structured, measured set of activities designed to produce a specified output for a particular customer or market."

The researcher adopts the concept that a business process is considered as a structured network of chiselled activities designed to create an output that is both relevant and of value to the company and to the customer.

2.1.1 Improvements on Business Processes – BPI, BPR and BPM

In the past few years, improvements on business processes have become even more relevant to ensure changes in a company's architecture and operation, enabling its development, and keeping it competitive. Inefficiency and poorly defined internal business procedures continue to prove to be the problem that many companies still confront (Damij, Damij, Grad, & Jelenc, 2008). Aguilar-Saven and Olhger (2002) as cited in (Damij et al., 2008), premise is that business processes are fundamental for the well-being of the company.

Many distinct concepts in the literature are associated with the improvement of business processes, such as Business Process Improvement (BPI) (Harrington, 1991), Business Process Reengineering (BPR) (Hammer, 1990), Business Process Redesign (Davenport, Short, & I, 1990), among others (Zellner, 2011). According to Buavaraporn and Tannock (2013) BPR can be considered an approach of BPI, however in accordance with Zellner (2011, p. 205) both can be seen as "a subset of redesign techniques". It should be noted that there are other approaches such as Total Quality Management, Business Process Innovation and Six Sigma (Buavaraporn & Tannock, 2013).

The BPR bubble that took place in the beginnings of the 1990s caused a rise on the pursuance of business processes' improvements later on (Zellner, 2011). For Michael Hammer and Champy, the first being considered the father of reengineering, BPR is the "fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed" (Hammer & Champy, 1993, p. 32). The BPR definition is more consensual than Business Process Management (BPM), although the first has been evolving over time. It is all about recreating a business process, perishing the previous business process, and ramping

up a new one (Abijith et al., 2013). However, throughout time technological features started to be embodied in the reengineering process becoming IT-led; whilst in the beginning the main concern was with the process perspective itself (Abijith et al., 2013; Melão & Pidd, 2000). This time changing perspective is justified with the evolution of the market, the customer needs, and organizational needs. Currently, Information Technologies are seen as an enabler and an enhancement tool in the redesign process (Melão & Pidd, 2000; Roeglinger et al., 2017).

Business Process Improvement can be distinguished from other approaches, relying on the level of improvement deployed (Zellner, 2011), this is, the main difference lies on the degree of applied change (Buavaraporn & Tannock, 2013). For example, Reengineering is associated with profound changes, whilst BPI is affiliated to incremental improvements (Zellner, 2011). Regardless of the deepness of change, the different approaches pursue the same objective, which consists of transforming business processes, either heavily or lightly (Abijith et al., 2013; Zellner, 2011). The main objective of BPR is to change the way a process works while BPI is all about small adjustments in an existing process in order to optimize it (Buavaraporn & Tannock, 2013). At first, the reengineering and improvement of Business Processes were only adopted by the industrial area; however, in the first decade of 2000 they started to become more enthusiastic in the services sector, particularly in the financial and health care sectors (Buavaraporn & Tannock, 2013). In the manufacturing industry, BPI laid emphasis on cost and quality dimensions (Buavaraporn & Tannock, 2013). The main objective was to increase efficiency and to reduce costs (Abijith et al., 2013). However, it is important to notice that in the services industry it is essential to adopt different and smoother dimensions, such as "expectations, responsiveness, empathy and assurance" (Buavaraporn & Tannock, 2013, p. 322), since the quality of the service is perceived by the customer through different dimensions. Harrington (1991) was the one who dubbed BPI. It must be distinguished from BPM, which is a concept related to the managerial approaches of process orientation (Imgrund et al., 2018). Currently, BPM is seen as an embracing term intended to encompass anything that is process driven, which deals with all organizational aspects. However, BPI is a generic term, which refers to a cluster of improvement approaches and therefore is not simply a subordinate topic of BPM (Zellner, 2011).

Today's world increasingly incorporates more information technology (IT) into business, whose investment has been continuous. Organizations are taking into consideration

this powerful tool to catalyse their business processes by improving their efficiency through Business Process Management (BPM) effectiveness (Abijith et al., 2013). The latter assists organizations to the betterment of business processes, in conjunction with the relentless search of technological advancements, becoming IT-enabled (Melão & Pidd, 2000). BPM genesis dates from 1990, giving rise to many distinct concepts such as Customer Relationship Management, Enterprise Resource Planning, among others. Different definitions of BPM from several literatures were gathered and made available by Abijith et al. (2013). It is possible to conclude that the literature does not converge since the definition varies from author to author; however, they all emphasize the fact that, in general, it tries to efficiently manage a company's business processes, through technology and different techniques. It is given relevance and greater importance to the automation of processes and therefore more autonomy to computer systems than to organizational managers (Imgrund et al., 2018).

Over time, and as already reviewed, improvements in Business Processes were given importance due to gains in cost reduction and its increased efficiency (Abijith et al., 2013). Without a doubt, little importance was given to the enhancement of customer service quality and therefore to customer satisfaction (Buavaraporn & Tannock, 2013). Damij et al. (2008) states that, the impact of the implementation of BPI can be measured by customer satisfaction, and not only by cost reductions and process benefits. A positive feedback from customers can be seen as a good improvement of a business process and as such, when improving the latter, companies begun to pay more attention to the improvement of customer service quality. Taking this in consideration, the quality of the customer service started to be a driver of BPI for companies (Buavaraporn & Tannock, 2013).

2.1.2 Business Process Modelling

As business processes are supposed to add value to a company, only by performing a comprehensive analysis inward the corporation can carry out improvements on the efficiency and effectiveness of systems (Osterwalder, Pigneur, & Tucci, 2010). Moreover, the improvement or even reengineering of business processes is favoured when conceptual modelling of the latter is implemented , allowing thus the deployment of software that backs business processes or to provide a simple analysis (Damij et al., 2008). Aguilar-Savén (2004) adds that this simple analysis is either to learn about the business process or to make decisions on it. One of the main reasons for the growing relevance and importance of business process modelling is that according to Ould (1995) as cited in (Damij, 2007)**,** modelling is

one of the demands of the ISO 9000 international standard for quality management and assurance.

Laden Aldin and de Cesare (2011) make clear the difference between a business model and a business process model. Business models' main characteristic is to determine the leading business processes that will compose the business model of the enterprise. Business process models turns possible the retrace and improvement of the latter to achieve better results and to offer better products or enhanced services.

Business process modelling engender a model that portrays that same business process (Damij et al., 2008). One of its goals is to assay the Business Process and to provide an analysis of its current condition. Hence, BPs can be improved or reengineered (Aguilar-Savén, 2004). Herewith, the main concern of business process modelling is to map a workflow or a business process, so that what was previously described is made possible (Mentzas, Halaris, & Kavadias, 2001). Indeed, a workflow model represents an automated process, while a business process model depicts both automated and manual activities (Laden Aldin & de Cesare, 2011).

Eriksson and Penker (2000), Caetano, Silva, and Tribolet (2005) and Luo and Tung (1999) as cited in (Laden Aldin & de Cesare, 2011) provide the main purposes of Business Process Modelling, and some of them are summed up below:

-Analysing the business process in order to contribute to process improvement and reengineering. Modelling allows to recognize flaws in the process and have them corrected so that it becomes more efficient. Firstly, the business process is modelled and only then, the reengineering or improvement process begins.

-Better comprehension of the behaviour of the process by portraying a standard model of the business process. This comprehension is attained by setting pre-defined concepts of business process.

-Making available an explanatory model for apprenticeship, forming appropriate information systems that backs the business.

-While performing and controlling the process BPM allows decision support.

There are several techniques to perform business process modelling and its prosperous modelling relies on the appropriate selection of method chosen (Damij et al., 2008). As studied by Aguilar-Savén (2004); L Aldin and de Cesare (2009); Damij (2007); Damij et al. (2008); Giaglis (2001), examples of techniques used to perform business process modelling, are flowcharts, dataflow diagrams, role activity diagrams, role interaction diagrams, business

process modelling notation, among others. The main techniques associated to this concept are epitomized below.

Flow-chart is a modelling technique and according to (Lakin, R., Capon, N., & Botten, N. 1996) as cited in (Aguilar-Savén, 2004, p. 134) can be defined as "a formalised graphical representation of a program logic sequence, work or manufacturing process, organization chart, or similar formalised structured.". It is often used to display through graphical representation a stream of activities from its beginning to its completion, being capable of showing a global frame of the system (Giaglis, 2001). It has a narrow range of symbols, arrows that link the activities, connecting the different actions through a right sequel order, decision, input and output, as well as start and end (Giaglis, 2001). This technique does not segregate activities as it relies on sequential flows, which means that it does not support a breakdown of activities (Aguilar-Savén, 2004). It is hard to link departments to activities because there is no way to assign responsibilities or to indicate who realizes the task in the graph (Aguilar-Savén, 2004).

A DFD, also known as a Data Flow Diagram, depicts the flow of information and data that circulates through several sites (Giaglis, 2001). The stream of materials is not involved in this process. According to Aguilar-Savén (2004, p. 134) DFD allows the analyst to "describe what a process will do, rather than how it will be done". This intends to show that the technique purpose is to represent data flows rather than activities (Damij, 2007). It does not provide important process elements as decisions or process precedence's (Giaglis, 2001). DFD only makes use of four elements which are, process, data stores, terminators, and flow of information (Aguilar-Savén, 2004).

Unified Modelling Language (UML) is a standard modelling language which includes manifold sorts of diagrams such as activity and interaction diagrams. Those diagrams are flowcharts used to model a process (Damij, 2007). Role Activity Diagrams (RADs) are used both in software modelling as well as business modelling (Aguilar-Savén, 2004). They rest on the roles played by people, teams, or departments in a process, the activities achieved by the players during the process, and the interaction between different activities in the process (Giaglis, 2001). Roles may include, but not exclusively, individuals, departments, or companies. A role, played by a certain player, can perform several activities, and consequently those activities can be interconnected, forming this way an interaction (Aguilar-Savén, 2004).

Role Interaction Diagram (RID) purpose consists of visualizing the interactive behaviour of a process, coming out from the affiliation between RAD and Object Interaction

Diagrams (Aguilar-Savén, 2004). They display coordinated interrelated activities connected to roles in a matrix-like fashion. The activities appear in the left side of the matrix, and roles on the top, being the matrix filled with text and symbols to represent the process (L Aldin & de Cesare, 2009). Inputs and outputs of the activities are not considered by this technique, which means that important parts of the process being lost. RIDs are not as flexible as flowcharts since they have quite rigid notation (Aguilar-Savén, 2004). However, they are capable to break activities. They become difficult to build, with many arrows pointing to either left or right in the vertical axis.

Coloured Petri Nets (CPN) is a graphical method oriented for design and verification of engineering systems (Aguilar-Savén, 2004), and therefore mainly used to this domain. Its scope is to represent by graphical standard notation mathematical concepts (Giaglis, 2001). The method implies huge knowledge by the modeller on this theme, given that the implicit mathematic language is complex. There are no hierarchy concepts, which makes it impossible to unfold the process into sub processes (Damij, 2007).

Business Process Modelling Notation (BPMN) is part of the existing Business Process Modelling Languages (BPML) and when used, generates a model called Business Process Diagram (L Aldin & de Cesare, 2009). BPMN is much more complete than other techniques in terms of elements. BPMN makes use of flowcharting methods skilled for business processes (Pourshahid et al., 2009). Although the higher number of elements when compared to other techniques, it is characterized by an easy use and tolerated by beginners. Furthermore, BPMN provides swim lanes, which makes it visually possible to distinguish activities and responsibilities of each department (Dumas, Rosa, Mendling, & Reijers, 2013). The latest update of this technique is BPMN 2.0.

Integrated Definition of Function Modelling (IDEF) is recorded as other technique to perform modelling. However, it includes several versions, a family of methods which heads to model the requirements of a company. IDEF was originally created for the application on the United States Air Force (Damij, 2007). The most important and suitable versions for modelling are IDEF0 and IDEF 3 (Giaglis, 2001). IDEF 0 is recommended to model computer software, since it is a modelling technique idealized to specify function models. It also intends to achieve a thorough commitment of domain experts athwart graphical representations (Giaglis, 2001). IDEF 3 is thought to capture behavioural aspects of a process (Aguilar-Savén, 2004) , as its aim is essentially to describe processes. Its implementations are often visually unpleasant, and its notation is mostly made up of boxes and arrows,

which frequently look cluttered (Aguilar-Savén, 2004).

2.2 Digitization, Digitalization and Digital Transformation

It is necessary to understand the new reality of businesses, which is being hardened by the emergence of many similar concepts. The organizations will need internal reinventing to be able to adapt themselves to the new reality, which represents a paradigm shift in the next coming years (Gobble, 2018b). Those concepts should be clarified; "Digitization" is not the same as "Digitalization", and "Digitalization" is not the same as "Digital Transformation". The latter urges as a recent term, embracing digitization and digitalization in its definition and at the same time turning them small but still important parts of it (Savić, 2019).

Table 2: Digitization definition

Studies (Date)	Digitization definition
Gobble (2018b, p. 56)	"…the straightforward process of converting analog information to digital… It often also captures the process of moving a process from manual to digital—replacing hand-filled forms with online versions that go directly into a database, for instance."
Savić (2019, p. 38)	"…conversion of analog data (paper archives) to digital format."
Brennen and Kreiss (2016, p. 2)	"the material process of converting individual analogue streams of information into digital bits"

The first commercial paper scanners begun to appear at the end of the last century and enabled the bulk conversion of analogue data to a digital format. This transition made possible that a tone of information would be converted into digital format (Savić, 2019). According to Brennen and Kreiss (2016) digitization is the simple conversion of information from an analogue to a digital format (see Table 2). Companies have been using it for a long time: converting paper files to digital form, or music from physical formats to digital ones. What is converted into digital is the information provided by several sources, and not the process - that is where digitalization takes place. Gobble (2018b) agrees with this definition but also considers that sometimes digitization includes transferring a process from manual to digital, and not only the inherent data itself. This last part of the definition goes against Brennen and Kreiss (2016) and Savić (2019), whose inclusion of the use of digitized information for a process is an example of digitalization. The authors' opinion matches when referring to the benefits of digitization, which leads to operational efficiency, saving time and

money, and reduction of errors as the filled forms are not edited by hand Gobble (2018b).

The researcher takes part of the definition given by Brennen and Kreiss (2016) and Savić (2019), that makes a clear distinction of what digitization is, whilst Gobble (2018b) starts to mix and to embody part of digitalization concept on it.

Table 3: Digitalization definition

Studies (Date)	Digitalization definition
Gobble (2018b, p. 56)	"Digitalization, on the other hand, refers to the use of digital technology, and probably digitized information, to create and harvest value. Digitalization tries to master the business change and to create new business models."
Savić (2019, p. 38)	"…digitalization concentrated on the automation of various business processes and operations, as well as on information processing."
Brennen and Kreiss (2016)	"…the way in which many domains of social life are restructured around digital communication and media infrastructures."

The second term that deserves to be enlightened is digitalization (Table 3). Brennen and Kreiss (2016) refer to Digitalization in the way how people interact among themselves, that is, in the context of social life: moving from interaction based on analog technologies such as telephone and post mail to digital interactions -WhatsApp, messenger, among others. This definition focus on changing social interactions rather than business models or processes, emphasising the use of digital technologies on this process. Savić (2019) explains that digitalization embraces three distinct phases. The first where distinct processes are automated through digitization and digital technology. The second one where associated processes are automated and linked together. The last phase, where multiple systems that backs business processes and information are composed into enterprise management systems. Computer applications are one of the tools available to Digitalization. Therefore, digitalization is interested on the automation of business processes using IT (Savić, 2019). However, Gobble (2018b) also addresses the fact that digitalization involves the creation of new business models, while for the other authors, that is where digital transformation begins. Digitalization concerns to business process and operations' automation. The use of digital information leads to a decrease on the production cost, as well as to the optimization of the business results, and on the other hand, it helps to enhance the customer experience through the tools that are made available online for them (Brennen & Kreiss, 2016).

Table 4: Digital Transformation definition

Studies (Date)	Digital Transformation definition

Gobble (2018a, p. 66)	"The goal of a digital transformation is continuous optimization—a company that can sense shifts in the market and respond quickly. Rather, digital transformation is a journey, and a journey needs a map—in this case, a clear roadmap driven by a digital strategy."
Savić (2019, p. 38)	"Digital transformation is about doing things differently—creating a completely new business model by using modern information and computer technologies… It places the customer at the centre of all its decisions and actions...a visionary digital value proposition that offers the opportunity to redefine a business."

Digital transformation is much different from digitalization, given that it not only concerns the change of processes by the company, as it demands a change on the whole business itself, while digitalization can be incremented in the company by different projects (see Table 4). It refers to a transformation on the business strategy - being customer driven - through an organizational transformation as well as the implementation of digital technologies (Gobble, 2018a). Savić (2019) also agrees that digital transformation is about placing the customer in the middle of strategic decisions. It seizes the opportunity of existing knowledge to change the organization creates a new business model using digital technology.

2.2.1 Digitalization and Improvement of Business Processes

BPI aims to provide improvements in administrative and supportive processes using several approaches such as BPR and BP Redesign (Harrington, Esseling, Nimwegen, & van Nimwegen, 1997). These approaches, as reviewed by Abijith et al. (2013); Melão and Pidd (2000), started to incorporate information technology (IT) as a key enabler for either the incremental or radical improvement of business processes. Digital technologies work as a tool for this purpose (Gobble, 2018b; Grover, Fiedler, & Teng, 1994; Roeglinger et al., 2017). Savić (2019) mentions some of digital technologies used on digitalization: computer applications and IT systems. The same author also illustrates an example of digitalization, a completely electronic implemented registration process. Therefore, digitalization can be perceived as an improvement of business processes, because "digitalization also includes the possibility of redesigning key processes to make them more efficient by the application of digital technology" (Albrecher et al., 2019, p. 7). The example given is a well-defined type of improvement on business processes as both concepts have at their disposal digital technologies to improve them (Roeglinger et al., 2017) and concentrate similar objectives and characteristics (Imgrund et al., 2018). Those goals are operational and cost efficiency, as well as

improvement of the quality of the services (Bohnert, Fritzsche, & Gregor, 2019). The streamline of processes is other benefit of digitalization, and it may affect the way insurers are organized, as concerning re-evaluation of workforce skills and allocation, and if necessary, reallocation of those resources (Albrecher et al., 2019). According to Grover et al. (1994); Parviainen, Tihinen, Kääriäinen, and Teppola (2017); Savić (2019), digitalization can change a process through its automation, for example moving from paper and manual processes to software and applications, and this automation is seen as an improvement of business processes. Digitization is part of digitalization, as the latter takes value from digitized information (Gobble, 2018b). Digitization also provides improvements on company's information processing competences using IT, thus increasing, the solidity and ability of business processes (Imgrund et al., 2018).

Accordingly, to achieve the automation of business processes provided by digitalization, it is necessary to analyse and improve them. That is, to take all the steps involved when performing an improvement. Povey (1998) as cited in (Roeglinger et al., 2017) refer these steps as respect to identify the business process subject to improvement, mainly due to its inefficiencies, assessing the BP, providing a comprehensive analysis of it, model if needed and then improve it.

2.3 Insurance Distribution Channels

The financial services industry has increased its distribution channels throughout the recent years (Choudhury, Dumm, & Karahanna-Evaristo, 1999). The insurance sector, which belongs to the first, is not an exception to the rule (see Figure 1).

Figure 1: Insurance distribution channels
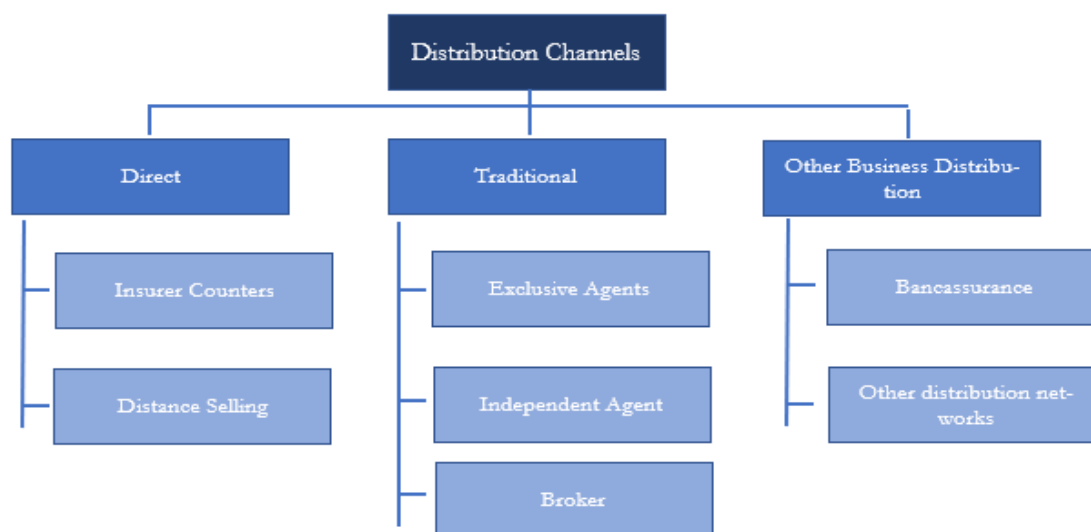
Source: Adapted from (Leiria, 2013, p.202)

Direct distribution channels (Leiria, 2013) or mass marketing channels (Regan & Tennyson, 2000) are characterized by the non-existence of intermediaries between the insurance company and the customer. This means that the insurance company directly sells to its customers in a B2C -Business-to-Consumer- logic. Direct distribution channels account two main channels which are insurance companies counters and distance selling according to Leiria (2013). Insurance companies are transforming their physical stores into anchors of support to traditional distribution channels given its decrease of importance as sales channel (Leiria, 2013). Distance selling can be mainly distinguished into sale by Telephone and Internet. Telesales are considered to be the pioneer distance sales channel. Throughout the years the importance of this channel has decreased as a core sales one, becoming however important in other thematic such as cross-selling and other (Leiria, 2013). The internet, and as it will be discussed later, is becoming increasingly important as a new support channel (Dumm & Hoyt, 2002; Regan & Tennyson, 2000).

Traditional distribution channels are characterized by the existence of intermediaries between both parties (Regan & Tennyson, 2000). They are authorized by insurance companies to commercialize their products and depending on the type of Agent they represent to collect insurance premiums. As described by Seguros (2019), insurance exclusive Agents are contractual linked with the insurance company and therefore act on the behalf of the latter, and do not have ability to charge insurance premiums. Independent agents have contractual agreements with one or more insurers to sell their products and may collect insurance premiums. Insurance brokers, act on its own behalf, and as well as Exclusive agents are independent from any insurance company but unlike the latter do not have contractual agreements with insurers. They represent the purchaser as a client and not as an intermediary in the broad sense, and act as consultant in the customers best interest (Zeier Röschmann, 2018).

Other business distribution channels are characterized by making use of other business stores or counters to create new forms of revenue (Leiria, 2013). Banks (Bancassurance) are one of the main channels incorporated on this designation as they act as an intermediary between the customer and the insurance company, and most of times the latter is owned by the bank, since in many countries a mortgage loan is obliged to have a life insurance associated, meaning financial gains, such commissions, for banks (Bergendahl, 1995). The remaining distribution channels are generalized as they can be composed by several business as for example by post mail office, automobile sector, among other type of business that can be

monetized by insurance sales. This type of business is known as B2B2C (Business-to-Business-to-Consumer) and it is experiencing high growth (Leiria, 2013).

2.3.1 The role of the Internet

Internet for commercial purposes started to become available in the decade of 90 (Young Kim & Kim, 2004). As one can see in the Figure 2, the number of internet users has been increasing exponentially. The propagation of the internet worldwide led to a boom of the electronic channels in most industries (Choudhury et al., 1999). Specifically, direct sales channels such as companies' websites, and more recently marketplaces, which plays the role of a cyber intermediary between a seller and a buyer (Dumm & Hoyt, 2002; Lin, 2003).

Figure 2: Evolution of Internet users worldwide
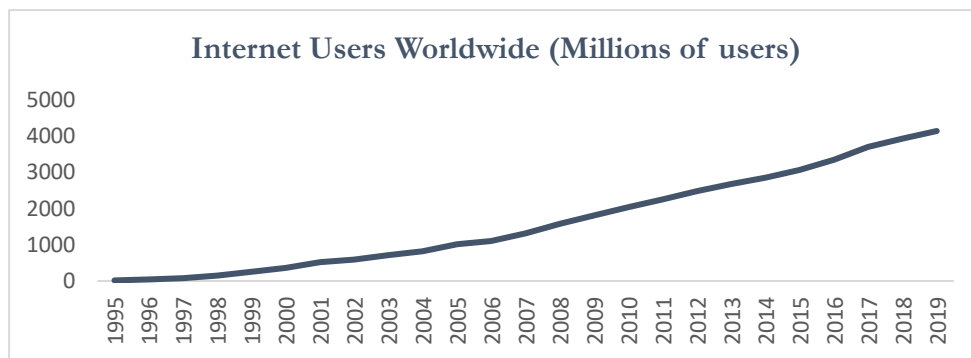
Source: Clement (2020)

Insurance Industry predictions and concerns about the internet in the precedents years of the end of the previous millennium and the beginning of the new one (Bohnert et al., 2019), were typically the same as for other industries such as the travel sector. Internet was thought to replace traditional Agents and there was huge speculation around the possible impact the internet would have on traditional – physical - distribution channels (Dumm & Hoyt, 2002; Garven, 2002; Lawton & Weaver, 2009; Lin, 2003). The agent - also known as middleman - works as an intermediary between a specific company and customers (Garven, 2002). The internet through e-commerce was considered more efficient and less costly, as huge commissions were paid to the Agents (Dumm & Hoyt, 2002; Garven, 2002). However, throughout the years it was possible to notice that what was seen for some industries was not applicable for others (Dumm & Hoyt, 2002; Garven, 2002; Young Kim & Kim, 2004). Previously to the appearance of the internet, on the travel sector vendors had no other choice than using intermediaries as travel agencies, to reach a greater scope of customers (Berne, Garcia-Gonzalez, & Mugica, 2012). However, with the internet appearance, the traditional agent started to be replaced by the first, as it became possible to consumers to purchase

tickets directly from airlines' websites, to book hotels directly from their website, etc. (Shankar, Smith, & Rangaswamy, 2003). Consequently, amounts of fees could be saved by the customer and the vendor, whether they were hotels or airlines. However, through time some travel agents adapted themselves and transformed their businesses, following the big wave on this sector, becoming online travel agencies and aggregating several services (Berne et al., 2012), as also new players followed the trend and entered the online market (Stangl, Inversini, & Schegg, 2016). Wiesböck, Li, Matt, Hess, and Richter (2017) also give the example of media industry where the core product – whether journal papers, magazines or others – is tangible and therefore could be easily be digitized to an "e"-format. Despite that, the same was not verified in the insurance sector (Dumm & Hoyt, 2002) since traditional Agents have not seen any loose of market share (Seguradores, 2019, October). Online sales in Portugal only accounts for 0,2% of the total insurance sales in 2018 - most recent numbers (see Figure 3 below). Insurance Agents and brokers continue to be the main distribution channel of insurance products, with almost 94% of the sales in Portugal (see Figure 4 below). The internet has not provoked a major negative impact on the traditional distribution channel as for example on the travel industry. In broad terms, this technology has been essentially adopted as a support channel and not so much as a distribution channel as initially predicted (Dumm & Hoyt, 2002; Regan & Tennyson, 2000). As previously mentioned and discussed by Leiria (2013), insurance companies are adopting its customer's counters into supporting points for Agents, and the same is happening with the internet, it is revealing other fundamental usage. This support channel "method" is referred to as ROPO by Eling and Lehmann (2018), research online and purchase offline. Insurers provide information on their websites about the products they offer, as well as other tools for customers, such as insurance simulators, and also inform the closest location of their Agents concerning customers' location (Melero, Sese, & Verhoef, 2016). Across industries, the use of multiple distribution channels is a key strategy to distribute products and services (Seth & Sahay, 2016). A study mentioned by Melero et al. (2016) highlights that 75% of consumers make use of two or more distribution channels to search, and purchase products or services. Insurers are also making use of several distribution channels: Firstly, by using Agents, brokers, and other direct channels such telephone to distribute business, and then by starting to include other direct channels, such as internet, and other B2B2C channels. This provided a multi-channel approach (Dumm & Hoyt, 2002). However, internet and others are arising within an omni-channel approach and not as other distinct channels (Young Kim & Kim, 2004). They have been integrated with

other traditional channels, making it possible to a customer move from a digital channel to a traditional one (Albrecher et al., 2019), and thus proving its use as a support channel. The use and management of multiple distribution channels separately and individually (Melero et al., 2016) can provoke conflicts between them. When distribution channels are not well managed and do not have a propriate structure design, they can bring conflicts and not only advantages (Wiesböck et al., 2017). For example, they can target the same customers. Those conflicts can spread disarray and dissatisfaction between customers (Seth & Sahay, 2016).

Figure 3: Market share of Direct Sales in Portugal, 2018
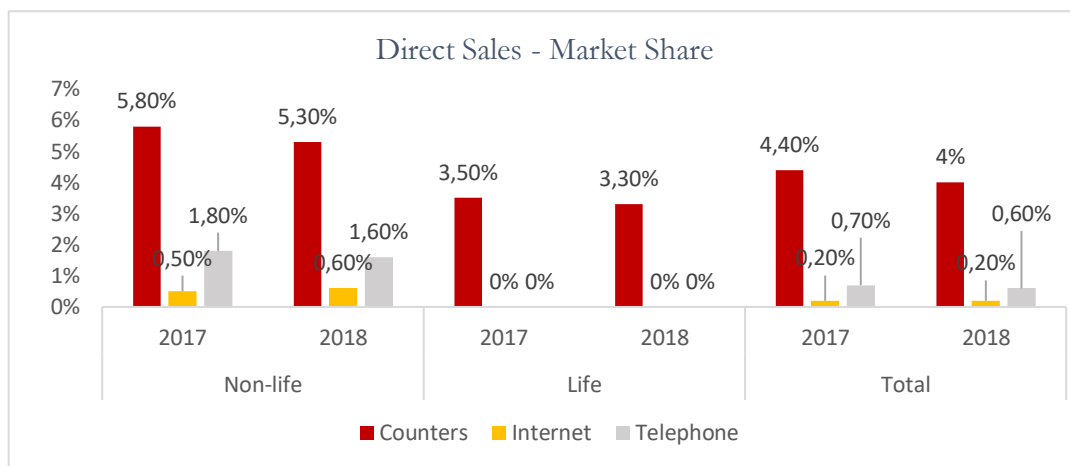
Figure 4: Market share of Agents and Brokers in Portugal, 2018
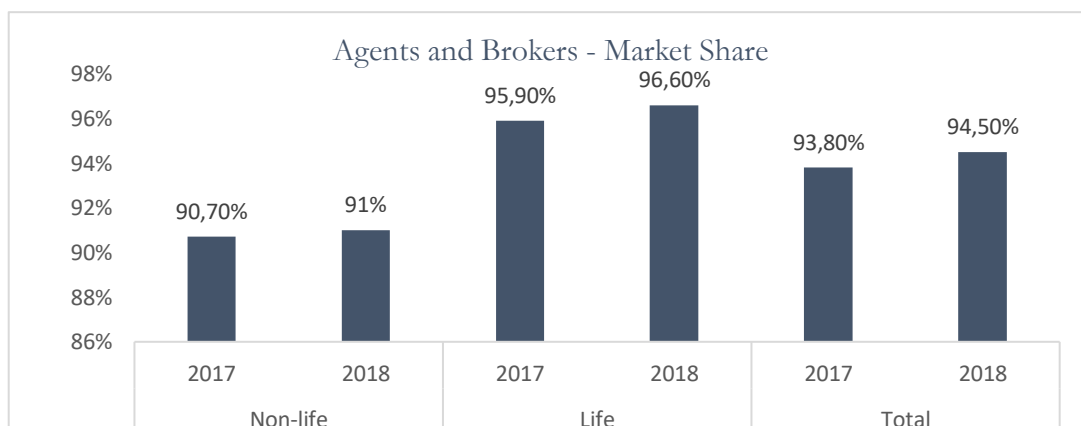
2.3.2 Online purchase: context differences, CE and CS, and antecedents

New communication channels came along with the advent of the internet, and together with the latter, enabled new ways of transacting products and communicating with customers (Melero et al., 2016). The antecedents (Rose et al., 2011) or attributes (Young Kim & Kim, 2004) regarding online purchase might have a positive influence on customer

satisfaction by transforming customer experience through a different and easier interaction with customers (Young Kim & Kim, 2004). It is important to understand the interaction change and if it leads to customer satisfaction. The concept of customer experience has been used along several business circumstances, becoming now explored on the internet context (Rose et al., 2011). As already reviewed, the latter is spread across industries namely in a B2C logic (Choudhury et al., 1999), turning customer experience an important matter on online purchases to enhance the companies' offers and distinctive skills. The differences between the offline and online purchase aid in understanding the differences between Offline Customer Experience and Online Customer Experience (OCE) (Rose et al., 2011).

Table 5: Comparison between offline and online contexts purchases

	Offline Context	**Online Context**
Personal contact	High to medium	Low
Information Provision	Varies in intensity over different media	Intensive
Time period for interactions	Dictated by the organization	Dictated by the consumer. Anytime, anywhere.

Source: Adapted from Rose et al. (2011)

Rose et al. (2011) presents the main differences between two different realities, with respect to offline and online purchase (see Table 5). One can instantly verify that the degree of personal contact between the consumer and the company is the first main difference observed, as online there is an absence of human interaction (Shankar et al., 2003). Chatbots and other features are starting to appear to decrease the need for personal contact and to provide automated assistance for customers, as administrative support to policy holders (Albrecher et al., 2019; Eling & Lehmann, 2018). From personal contact interactions, subjective responses are created by the consumer (Rose et al., 2011). The way information is provided also differs in the two contexts. On the offline context it differs according to the communication channel and can be limited, while online there can be an extensive availability of information and easiness of access (Shankar et al., 2003) although not explaining all the consumer doubts since their limited knowledge (Choudhury et al., 1999). Information via Web is often just one way (Lin, 2003), but chatbots appear again to contradict this. The time period is also other important characteristic as on an offline context, the customer is restricted by the company's schedule, whilst online he can access it anytime and anywhere (Lin, 2003). The online context can be more appellative regarding the opportunities to interact (Shankar et al., 2003). Furthermore, this new interaction not only can be made over a

computer, but the recent reality enabled the same experience through a smartphone (Melero et al., 2016), designated by M-commerce (Rose et al., 2011).

Given that the two realities were exposed above, the customer experience concept is defined below, similarly between different authors (see Table 6).

Table 6: Customer Experience definition

Author (year)	Customer experience definition
Meyer and Schwager (2007, p. 2)	"the internal and subjective response customers have to any direct or indirect contact with a company"
Carbone and Haeckel (1994, p. 1)	'the take-away impression formed by people's encounter with products, services and businesses'
Verhoef et al. (2009, p. 32)	"holistic in nature and involve the customer's cognitive, affective, emotional, social and physical responses to the retailer. "

Meyer and Schwager (2007) define direct contact as interaction occurring during a product or service acquisition and it is generally initiated by the clients, whilst indirect contact is related to an unexpected meeting with something related to the company, rather by a commercial advertisement or other. Through this contact, rather direct or indirect, the customer develops a subjective inward reaction. The second definition of CE also goes along with the first, in the sense that the experience begins whenever a customer and company interact, developing the customer a subjective impression on its mind. Besides counting on cognitive elements, Lin (2003); Rose et al. (2011); Verhoef et al. (2009) concluded that the reviewed literature has come somewhat on a consensus, agreeing that emotional and affective processing elements are also part of the experience formation. The literature regarding OCE is limited, but Rose et al. (2011) define it as being a set of cognitive and affective states, as internal states within an online purchase behaviour. The definition must consider affective elements, as it is built upon the customer experience concept in the offline context. Rose et al. (2011) provides a conceptual framework for OCE, embodying its antecedents, consequences, and outcomes.

Customer satisfaction (CS) is considered by Rose et al. (2011) an outcome of OCE, the result of cumulative positive effect during customer experience (Lin, 2003), and in last case, repurchase intention via the online channel (Rose et al., 2011).

Meyer and Schwager (2007, p. 2) define CS as "essentially the culmination of a series of customer experiences or, one could say, the net result of the good ones minus the bad ones.". When the customer subjective perception of an experience fulfils or has a slightest difference from its expectations there is CS (Lin, 2003). Rose et al. (2011, p. 32) states that "CS is a

consequence of positive emotional and cognitive states of OCE". Other definition that converges with the previous is that of Shankar et al. (2003, p. 154) "satisfaction as the perception of pleasurable fulfilment of a service". According to Shankar et al. (2003) study, consumers who choose an online service have higher chances of service satisfaction than those who purchase offline. As customer experience is a determinant of service or customer satisfaction (Rose et al., 2011) , it is also applied to the customer experience.

Antecedents or attributes influence and impact the online customer, and they are presented and resumed from the literature. Apart from the possible cost reduction regarding the absence of intermediaries such as Agents or others – physical stores - (Lin, 2003), there are other reasons that may drive or affect the adoption of the use of the web as a sales channel for a specific industry. The diffusion of the internet occurred in both, travel, and insurance industries, but with distinct adoption outlines. Dumm and Hoyt (2002); Rose et al. (2011) discuss other motives that may affect this adoption, such as trust and security. Platforms such as Amazon and eBay have already proved possible to make customers trust this channel to provide personal and financial data (Lin, 2003). Time saving is an important factor that may attract consumers for online shopping (Young Kim & Kim, 2004), hence arising as an important matter for CS also (Shankar et al., 2003). Choudhury et al. (1999) also refers two different concepts, knowledge uncertainty and choice uncertainty, as importance factors that impact the customer channel choices. Knowledge uncertainty is the factor that influences whether consumers purchase products by traditional or electronic channels. The knowledge uncertainty includes perceived product complexity and customer sophistication. Other factors may exist but the consumer perception that insurance is a complex product is the main reason why insurance accounts for low percentage of online sales, especially for non-standardized and complex products, as life insurance branch is characterized for (Wiesböck et al., 2017). The success of online selling is dictated by the products' characteristics (Young Kim & Kim, 2004). Therefore, perceived complexity is one motive for channels co-existence and as referred before, it nearly creates the need for an omni-channel. If the internet market share as a distribution channel increases, probably it is due to the perception that the complexity of insurance products has changed (Choudhury et al., 1999).

3. Real Vida Seguros

  Real Vida Seguros S.A., as of now RVS or Real, is a Portuguese insurance company, founded in 1989 and based in Porto. In 2013 Real was acquired by *Patris Investimentos*, becoming this way part of a financial group specialized on asset management, savings management, investments, and brokerage. Since then, RVS expanded its scope through the acquisition of other players in the field. Despite that, Real organizational focus is on the insurance business, particularly in the life insurance and its associated financial insurance products. The insurance market in Portugal presents a competitive nature, being operated by hundreds of companies. The information held by ASF – *Autoridade de supervisão de fundos e pensões*, on 31st December 2018, accounted that 644 insurance companies were licensed to operate in Portugal. The life insurance branch includes 19 entities devoted to its exploration, where 12 are national companies and other 7 are free to provide services (FPS). For the broad market, including life and non-life branches, it is important to notice that the five main insurers control over 50% of the whole market, having hence market shares higher than the remaining companies. Real is placed in 19th place and keeps an overall 0,89% market share (Figure 5).

As for the life branch, the top three players hold 53,70% of the market share, whilst Real, is placed on the 11th position and counts with 1,50% market share (Figure 6).

Figure 5: Portuguese insurance market share distribution, 2019
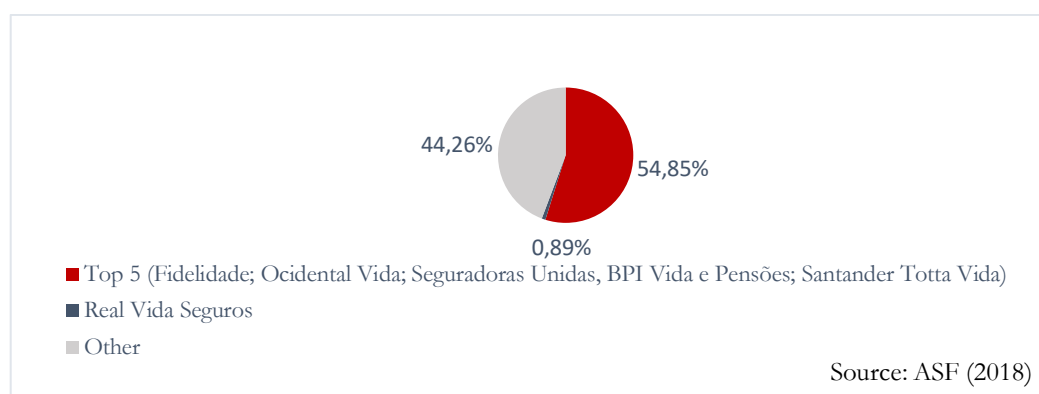
Figure 6: Portuguese life insurance market share distribution, 2019
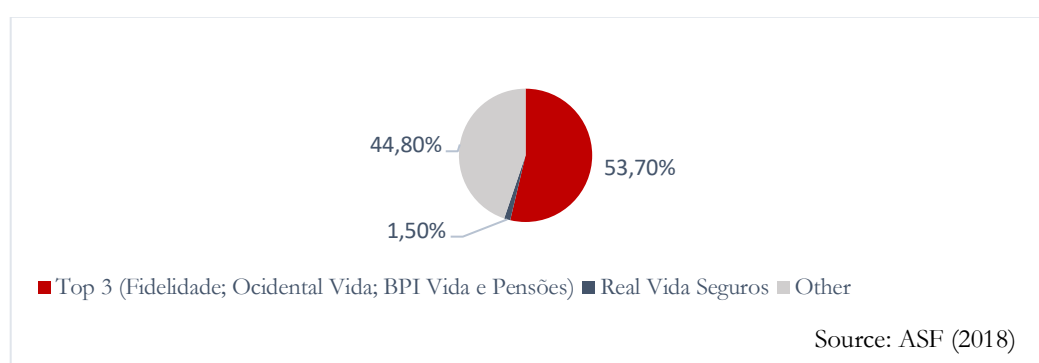
The insurance industry, particularly in Portugal register unfavourable conditions to its growth, as a consequence of low interest rates (Lusa, 2020, May), which act as deterrent of financial insurance products underwriting on the life branch. Therefore, in view of its expansion objectives in a highly demanding and competitive industry context, Real set the challenge of reformulating its operation in order to promote differentiating factors. Business processes and customer service areas were identified within the company as the most likely ones to obtain competitiveness gains. On the insurance sector, the administrative processes and customer interaction are typically built up in a conservative way, still dictated by the traditional intermediation paradigm, supported on physical format, this is paper. In fact, RVS issues about four hundred thousand invoices annually, as well as other amounts of insurance contracts, which turns the administrative burden unsustainable, costly, and error prone. It was therefore clear that the limitations inherent in manual data insertion were of imperative resolution. Thus, Real pointed out the dematerialization of processes and the transition to a paperless logic as strategic objectives for promoting the company's efficiency. Business Process digitalization is not a novelty in what regards the insurance industry, as there is some existent offering in some insurance branches, such the auto sector (Eling & Lehmann, 2018). However, the administrative burden related to that segment is less significant, representing an incomparable challenge for the life insurance sector.

Concerning the internship, it was carried out on a basis of a continuing perspective of the work developed by the company in 2019. The researcher was allocated to the Planning and Innovation Department, and his work took place from September 2019 until April 2020. In the beginning of 2019, Real launched a new insurance policy issuance system, completely digital. The implementation of this new system was done by product and not incorporated into all products at once. Therefore, after bringing it in for the first product in February of 2019 and having implemented it for their core product in June of 2019, it was necessary to incorporate other products on this new system. During the internship, several products were integrated into this new platform, and the department team was responsible for developing the integration plan and to perform quality tests before the entrance of the product into production environment.

In addition, the company participated in a marketing conference in March 2019 – QSP Summit - in which it promoted a simple and innovative product, *Real Vida Condutor*, for direct and online underwriting. This was the first product made available by the company for that purpose. The company wanted to extend this offer as a complement to other products -

through cross selling - and therefore the pilot project was examined.

3.1 New insurance policy system for agents and brokers

The distribution channels an insurance company has at its disposal were already reviewed in the chapter 2.3. However, in order to analyse the impact of digitalization of business processes on RVS the focus will be on the traditional distribution channels of insurers which are Agents, either exclusive or independent, and brokers. The new insurance policy issuance system was developed for both Agents and brokers, as they represent the main distribution channel of Real. The system consists of a digital platform of intermediation, where insurance policies can be directly issued, since the company acquired a digital signature. As the production of a PDF document was not enough to certify the document, it was necessary to acquire a digital signature of the company. On this platform, Agents and brokers previously insert all the information concerning the customer. The information is later sent to the latter via SMS and Email for its validation and confirmation. This means that the signatures of the Policy holder and the Insured Person becomes unnecessary, turning the transaction tacitly ratified by the Policyholder upon payment. The information that the customer is entitled to receive (all the contractual conditions – Proposal filled, General Conditions and Collection Notice) is now added together, being all digital certificated. As already said, the payment of the Collection Notice is enough to trigger the issuance of the insurance policy – tacit formal confirmation. After the payment, the insurance policy is issued, and it is sent a new email with all the information (corrected before by the customer if necessary) together with the Particular Conditions. The first product to be available through this platform was *Real Seguro ******, in February 2019, due to its characteristics. The previous process used by the company was too rudimentary, but indeed still very presented on the life insurance branch given its complexity. The insurance policies were filled by hand by the Agents and sent to the company to manual insertion of the data on a risk management application.

To sum up, the main differences between the previous and current business process are:

- The Agents and brokers have at their disposal a tool on their *Área Reservada* where the insurance proposal can be digitally filled and issued there;

- Therefore, there is no need to the Policyholder and Insured Person(s) to fill by hand and to sign the proposal since the company has a digital signature that certificates a digital proposal. This means that there are policies that are automatically issued by the Agents, and that now, do not need to be reviewed by the Subscription Department for Risk Management;

- The information is automatically sent via email to customers, and confirmed via

SMS;

- The payment of the Collection Notice triggers the insurance policy issuance by tacitly confirmation;

- The payment by bank check was withdrawn.

3.1.1 Business Process Modelling Notation and explanation

BPMN

In order to represent the previous and current business process the company operates through a modelling technique, it was necessary to choose it from those reviewed on the Literature Review. Therefore, the method used with this regard is presented on the chapter 4.1.1.

BPMN 2.0, ended up being the technique chosen. Therefore, its language needs to be specified. BPMN 2.0 is divided into five main categories and each category is composed by different elements, presented on the Table 7. In order to simplify, only the elements used in the representation of the business process are clarified on Figure 7.

Table 7: BPMN 2.0 categories and elements

Flow Objects	Connection Objects	Swimlanes	Artifacts	Data
Events	Sequence Flow	Pools	Group	Data Objects
Activities	Message Flow	Lanes	Text notation	Data Inputs
Gateways	Association			Data Outputs
	Data Association			Data Stores

Source: Adapted from (Dumas et al., 2013)

Figure 7: BPMN 2.0 elements description
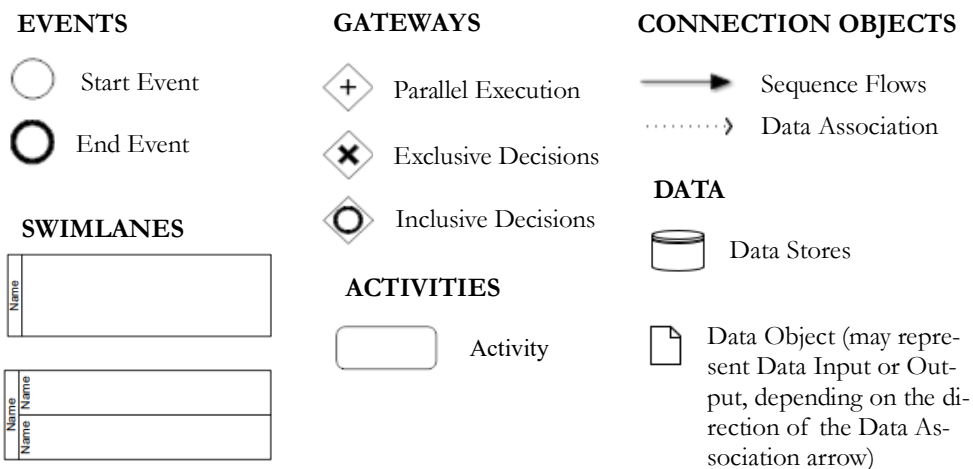
Source: Adapted from (Dumas et al., 2013)

The business process modelling was designed using Microsoft Visio Professional, a software provided by University of Porto for the use of the academic community.

Even though the implementation of the new business process has caused processes changes in all the departments, the researcher finds interest to fully exploit the procedures change on just three departments/intermediaries, as Agents and Brokers, Life and Risk Subscription and, Commercial Channel. The remaining departments involved on the process such as Treasury and Collections, and Information Systems are not modelled, and indeed not explored on this study.

Figure 8: Agent/Broker – As Was
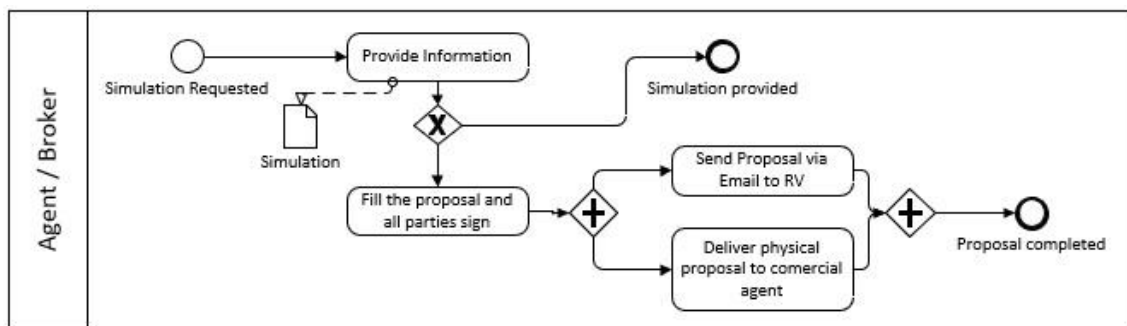
As indicated by Figure 8, the process begins with the Agent or Broker, which is asked by a customer to provide information about the quotation and guarantees that a specific insurance product have. In order to provide that information, the agent has an online tool, an insurance simulator of the marketed products, available on his webpage *Área Reservada* (AR). The agent can deliver the printed document with the insurance details to the customer and if interested he is able to underwrite the product, since the agent has printed proposals to be filled, otherwise the process ends here. The proposal asks for information regarding personal data of the policy holder and insured person, health condition and also the type of payment of the first receipt depending on the product that is being purchased (ATM, D.D. or bank check). After completing the proposal, the latter is signed by the Policyholder and by the insured person(s). The policyholder is also given the collection notice for payment or proof of it. Then the agent scans the proposal and has it forwarded to the insurance company by email. If the payment is done by bank check, the agent must deposit it on the company's bank account and send the receipt together with the proposal by email. The Commercial Agent responsible for the Agent/Broker who stablished contact with the customer, collects the original physical proposal from the latter, as well as an existing bank check receipt.

Figure 9: Agent/Broker - As Is
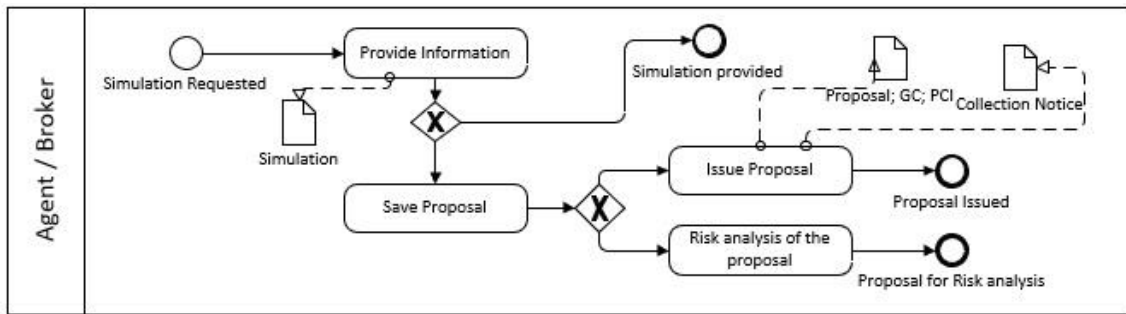
The Figure 9 presents the Agent/Broker in the new process, and the beginning is similar. The agent continues to access his AR to provide an insurance simulation. However, if the customer is interested to underwrite the product, the agent fills the proposal on his online intermediation platform, importing the data inserted on the simulation, being however liable to be changed. While completing the proposal, the system performs all validations underlying the product conditions, as for example the age, health condition on the life risk products functioning as a risk analysis, underwriting limits of safe capital, among others. Then, after the online recording of the proposal, and according to the health conditions status, the system, either automatically issues the Proposal or directs it to Risk analysis, to be reviewed by Life and Subscription Department. If the proposal is issued, the information is sent to the customer via email and SMS (Proposal, Collection Notice, General Conditions), which upon payment triggers the insurance policy issue.

Figure 10: Life and Risk Subscription Department – As Was
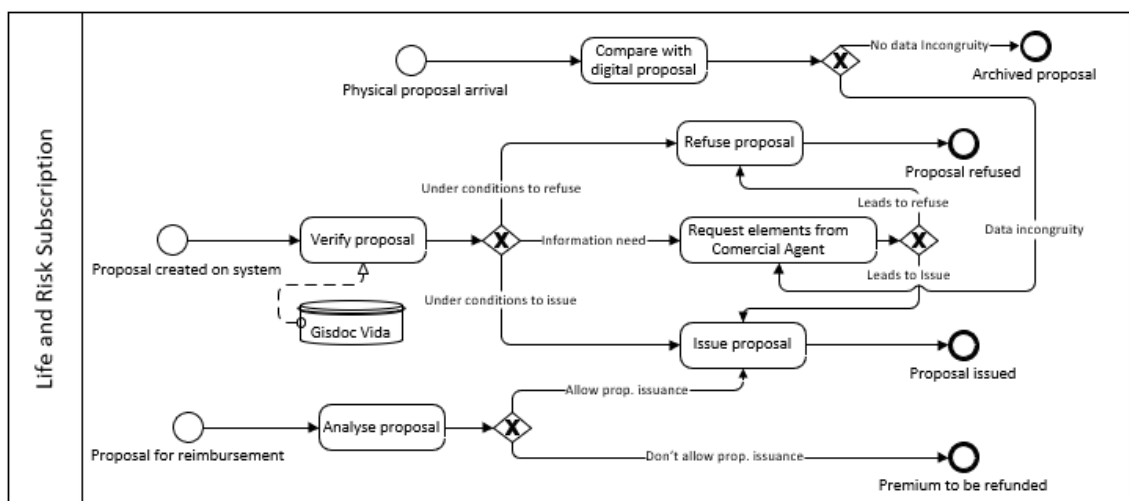
The proposals inserted on the software, Gisdoc Vida (risk management application), by the Commercial Administrative, are analysed by this department. All the proposals were to be reviewed by the teams' department. However, the ones which there was no need to ask

for additional elements, or to consult reinsurance manuals, this is, which meant that any other action would be taken than issuing the proposal at first "sight", were considered "automatically issued". Hence, the remaining proposals were considered for "Risk analysis". If there was the need to ask for any additional element, it was requested to the Commercial Agent, which can lead to the correction of the proposal and consequent issuance or even to its annulment. The proposal could also be refused without any additional request. The department is also responsible for analysing proposals whose payment by ATM is in overdue date. If the payment is accepted then the insurance policy is issued, and if it is not accepted, Treasury and Collection is requested to perform the chargeback. By last, when the physical proposals arrive at the company, the department compares it with the digital proposal already created on system. If there is any incongruity, elements can be requested to the Commercial Agent, that once again can lead to is issuance or annulment. If there is not any data incongruity, the proposal is archived (see Figure 10).

Figure 11: Life and Risk Subscription Department – As Is
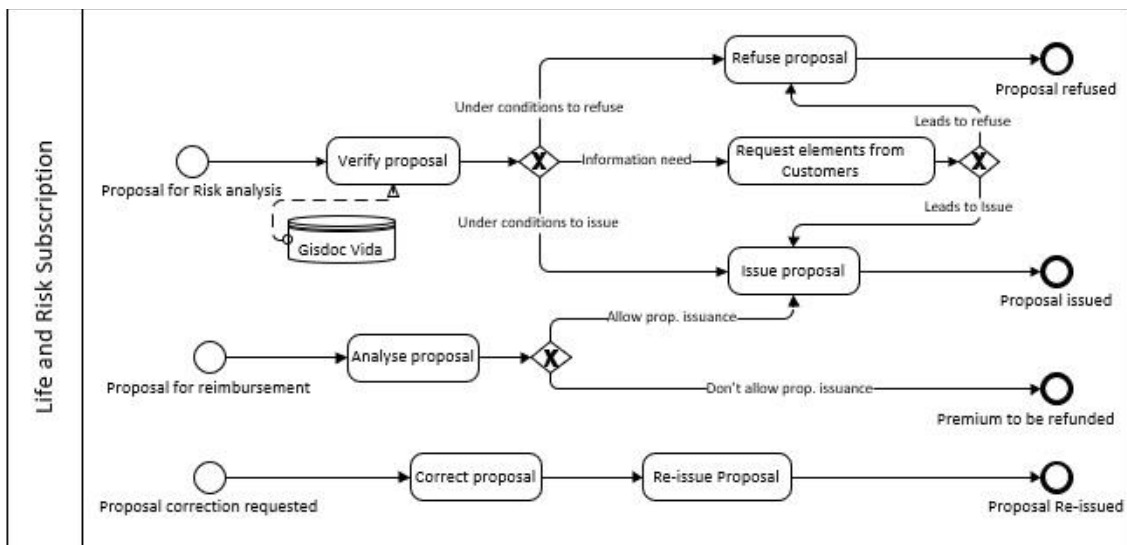
This department records the most significant differences regarding the work volume to be performed. The team continues to carry out risk analysis of the proposals, however currently the number of proposals to be analysed is much lower, because the system automatically performs the risk analysis of proposals. Moreover, there are not physical proposals to check data incongruities. Proposals which do not go through the rating criteria automatically appear on the risk management application. Proposals whose payment is overdue are still to be analysed by the team. The Department decides the allowance or not of the proposal, and in case it is not issued, then the reimburse is to be done by the Treasury and

Collections. With the new issuance system, the team records much more corrections requests as the payment of the proposal act as a tacit confirmation of the information, and people are committed to the information provided (see Figure 11).

Figure 12: Commercial Channel - As Was
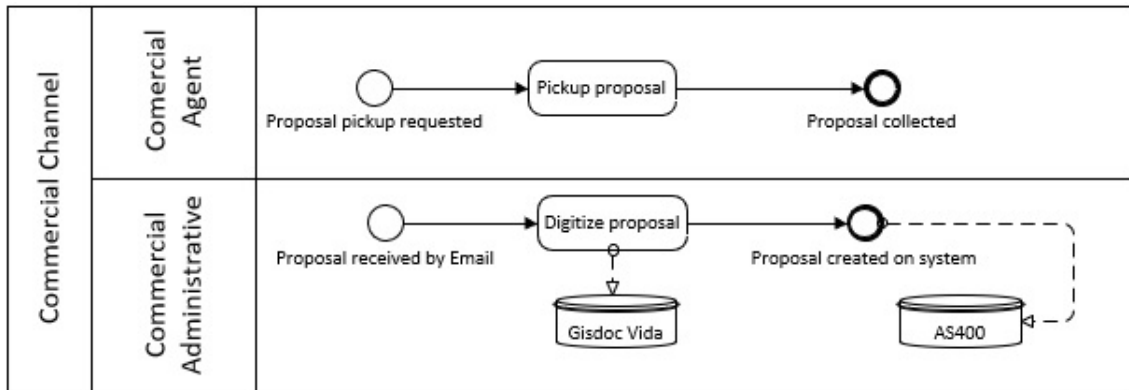
The role that the Commercial channel played is presented on Figure 12. The Commercial Agent accountable for the agent or broker who fills the proposal was responsible for picking up the latter and bring it to the company. At a later stage, the proposal was sent to an outsourcer archives.

The Commercial Administrative digitized the proposal received by email, and the possible associated documentation on the company risk management application (Gisdoc Vida), to be analysed by Life and Risk Subscription. Hence the proposal was directly created on the company's AS400 system.

Commercial Channel - As Is

Currently, the Commercial Agent does not need to meet his agent or broker in order to pick up the proposal, since there is not any physical proposal, and it is filled directly into the system.

4. Method

This report aims to explore the impact of digitalization in an insurance company, through two different digitalization projects. Therefore, this study addresses two different research questions (RQ):

1) What is the impact of digitalization of business processes?
2) What is the impact of digitalization (online purchasing) on customer interaction?

This chapter is divided into two sub-chapters. The first one is related to the first RQ, whilst the second part is aimed to the second RQ. The present study is composed of primary and secondary data. While the primary data is generated by the researcher for some specific purpose of directing the research problem, the secondary data is data generated by an organization, represented for example by customer databases or sales (Malhotra, Nunan, & Birks, 2017). Consistently with the goals of this study, as regard of primary data, the first RQ makes use of qualitative research which is the most flexible and better way to interpret the theme under investigation, since it is deeply interpretive and descriptive (Bento, 2012, Abril), despite being the most subjective type of analysis (Bogdan & Biklen, 1994). Furthermore, it also uses secondary data such as the company sales, to aid the impact analyse. The second RQ resorts to a quantitative analysis which is the scientific process that through statistics searches for measurable and objective data. Its main goal is the depiction of something which is often about the consumer or market trends (Malhotra et al., 2017).

4.1 Method for qualitative study

4.1.1 Business Process Modelling Technique

Several studies in the literature provide methodological guidance that may support academics as well as specialists, in selecting the most suitable technique to model a business process. Aguilar-Savén (2004) presents a table which epitomizes some modelling techniques according to their attributes and characteristics, as also groups its strengths and weaknesses for both the user and the modeller. Furthermore, Aguilar-Savén (2004) also provided a framework where the techniques are classified according to their purpose and change model permissiveness. Together, they are supposed to aid users on what technique they should employ on a specific business process. Damij (2007) defined five criteria to decide on which of two techniques to use when modelling a specific business process. Those five criteria were based on the four criteria of Lam (1997) as cited in Damij (2007), that consisted of enabling

differentiation between the quality of methodologies and techniques, as well as on a set of 16 questions by Avison and Fitzgerald (2003) as cited in Damij (2007). Those five criteria defined by the latter were: simplicity, flexibility, visibility, user involvement and software support. Giaglis (2001) proposed a framework for assessing Business Process Modelling techniques (Figure 12). The framework is a matrix accommodating Modelling goals and objectives with Process perspectives, which are represented by the framework below. By combining these two variables, it is possible to assess a framework to analyse and compare different techniques. Giaglis (2001) classified the techniques reviewed in his paper according to the framework, giving risen to the matrix below. The same author adds that other techniques can be added to the model without affecting its validity.

Figure 13: Framework to analyse and compare BP modelling techniques

These three studies present frameworks and criteria to help decide which technique to use when modelling a business process. One can find similarities between them. Giaglis (2001) goes beyond Aguilar-Savén (2004) in his analysis, because besides presenting purposes or objectives of the techniques also relates them with process perspectives. Hence, Giaglis (2001) framework is adopted in this report to aid the process of choosing the BPM technique. It is important to notice that there are two techniques, BPMN and RID, reviewed in this report, that were not aim of analysis by the same author, and consequently are not represented on his framework. However, according to what was reviewed and made available by

Aguilar-Savén (2004); L Aldin and de Cesare (2009); Laden Aldin and de Cesare (2011); Dumas et al. (2013), it is possible to include them in the matrix. RID integrates Functional perspective, Behavioural perspective, and it is limited regarding Organizational Perspective. However, concerning the objective of the modelling, it covers Understanding & Communicating, Process Improvement and Process Management. BPMN fits all four process perspectives, however limited on informational data. As for modelling objectives, it includes Understanding & Communicating, Process Improvement, Process Management, and comes limited for Process Development. For this report, the goal of modelling a business process consists of having it graphically displayed, namely in a chart, becoming understandable and clearly communicated to the reader (Understanding & Communicating), followed by a narrative description. According to Barrett (1994), the process visualization must be described in two different ways: a narrative description and a graphical representation. Therefore, by presenting the previous and the current business process the company operates, their main differences will become clear. BPMN urges as the most complete technique on this purpose, as it enables the specification of all process perspectives: what activities are performed, when and how, by whom, and the data produced by the process (Pourshahid et al., 2009).

According to Damij et al. (2008) the most suitable way to identify, model and analyse a specific Business Process consists in developing interviews with the involved workforce, so that activities, tasks, events, among other elements will become identified. However, as an internship was performed, direct observation, documents, description of both processes were available to the researcher, basing its modelling and description on them.

4.1.2 Method of data collection

Concerning the qualitative study, the instrument of data collection chosen consists of semi-structured interviews. It is defined as being semi-directed once it is done from an interview script. Its main advantage lies in the fact that the interviewer is able to previously define the themes to be developed, meaning that the interview is structured and thus offering a greater control of the interview by the researcher (Quivy & van Campenhoudt, 2008).

Three semi-structured interviews[1] to company employees were conducted (to the Operations department Director which is also responsible for Life and Risk Subscription Department, Planning and Innovation department Director and Commercial Agent). They

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[1] Presented on Appendix 1

were designed, conducted, and delivered in Portuguese, and had an average duration of 30 minutes each. Due to the pandemic COVID-19, the interviews were performed on Microsoft Teams by video call. They occurred in three different days, from the 10th, through the 12th of April.

The interviews are composed by two different parts: interviewees presentation and their perception about digitalization (5 questions) and the second part which has a different number of questions depending on the interviewee's department, aiming to understand and explore the impact of digitalization in each different company's section. The choice behind those three interviewees was strategic: the Director of the Planning and Innovation Department is part of the department that was involved in the implementation of the new process, which was also responsible for monitoring and analysing its effects. That was the same department that the researcher was allocated to. The other two interviewees belong to departments where a greater change was felt and that according to their roles were clearly capable of detailing what was intended to.

4.1.3 Interviewees characterization

Three different company's employees from three different departments were subject to the semi-structured interviews: Operations Department Director, Planning and Innovation Department Director, and Commercial Channel Agent. To be possible to get to know each of the interviewees, or at least get revealed some individual aspects, the characterization of each one was the first category to be analysed. This information is presented in the Table 8 below.

Table 8: Characterization of the interviewees

	Company position	Operations Department Director
	Age	56
I1	Gender	Female
	Education	Bachelor
	Years of working in the company	15
	Company position	Planning and Innovation Dep. Director
	Age	35
I2	Gender	Female
	Education	Bachelor
	Years of working in the company	19
	Company position	Commercial Agent
	Age	37
I3	Gender	Female
	Education	Technical-vocational course
	Years of working in the company	19

From this data, it is possible to conclude that the interviewees belong to the middle and senior staff of the company: two of them have leadership positions as company's directors and the other is responsible for leading a team of Agents and brokers.

4.2 Method for quantitative study

4.2.1 Real Vida Condutor – QSP Summit 2019

QSP Summit asserts itself as one of the most relevant Marketing and Management conferences in Europe, known for hosting many companies' leaders. In March 2020, the city of Matosinhos was prepared to receive its 14th edition, which was cancelled due to the pandemic COVID-19. The conference of 2019 also took place at Matosinhos, during the 21st and 22nd March. It reflected the challenges that companies, brands and professionals will face in the future, framed in the times of transformation the world is witnessing. During the conference, several topics came into discussion: Online-Offline; Voice-Data; Human-Robots; Technology-Workplace; Creativity Management; People-Culture; Product-Branding; Marketing Technology; among others. The people attending to this conference were about 2300 top executives, in each of the two days of the event, from 120 different companies of different areas. QSP target audience are decision makers from companies which do not attend but leading conferences, and which are at the forefront of these themes.

In 2019, Real Vida Seguros associated itself with QSP Summit as one of the main sponsors of the event. As such, Real Vida had the possibility to have a stand in the exhibition, and the company took it as an advantage to promote and test the launch of a new product, Real Vida Condutor (RVC), through an online direct sale, thus representing a pilot project. RVC is a personnel accident insurance product, innovative in the market for its simple and effective characteristics and procedures associated with its purchase. The entire subscription process was simplified, in order to allow the customer in a convenient and quick way directly underwrite the product from its smartphone or even from a computer and have immediate access to all contractual relevant documentation. During the summit, the participants who underwritten the product, were exempted from paying the first three months of insurance premium and could invite, via Email, their friends to purchase RVC as well. Additionally, for each friend invited and that underwritten RVC, the first won 3 months up to the maximum of 12 months of offer.

The customer accessed the landing page through one of the following ways:

➔ During QSP Summit, between the 21st and 22nd of March

➔ During the promotion "Amigo Convida Condutor", between the 21st and 23rd of March

4.2.2 Method of data collection and hypothesis

Regarding the quantitative study, a survey for RVC customers was elaborated. It will be used to explore the impact on customer interaction, which according to Creswell (2014, p. 249) "...provides a quantitative or numeric description of trends, attitudes, or opinions of a population…" and it was directed by email and accessible through a link of Microsoft Forms. The online link was available from the 22nd April until the 10th June. The email was re-sent on the 25th May, since only 58 answers (43,6%) of 133 customers were recorded at the time. On the 10th June, the online survey was closed with 77 answers (57,9%). The survey was designed, conducted, and delivered, in Portuguese. On average it took about 4 minutes to be answered, according to the five pre-tests made.

The survey[2] is composed by two parts.

The first part consisted of obtaining demographic information about the respondent, to test whether there were any significant differences between people from different gender, age as well as education levels. This characterization will be presented later.

The second part of the survey aimed developing questions that would aid answering the second RQ. Firstly, it is tried to understand which people had never purchased an insurance product before RVC and those who had, and through which distribution channel they had purchased. If respondents had never bought an insurance product or they only had purchased it through an online channel, they were not able to compare the different buying experiences (an online customer experience versus an offline customer experience). In spite of the fact online customer experience is a recent term and that has been expressed in several ways (Rose et al., 2011), according to the literature the consensus is that the online experience has similar effects on the customers, such as emotive and cognitive ones (Lin, 2003; Verhoef et al., 2009). However, despite the similarity of effects, it is important to understand whether the customer's experience (Rose et al., 2011) concerning online channels is superior when compared to the traditional one (Shankar et al., 2003) **(H1)**.

After this comparison, all customers were asked about how they did experience RVC purchase. In case the customer had a positive overall experience, and that the good less bad experiences from the process are positive then he will want to repurchase another product

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[2] Presented on Appendix 2

from the online channel. Hence, it is intended to test if the customer experience has a direct effect on repurchase intention (Rose et al., 2011) **(H2)**.

The level of counselling needed to purchase an insurance product is then questioned to be analysed together with the consumer perception of product complexity being an influencer of channel decision. The consumer decision of choosing either an online or offline channel is influenced by knowledge uncertainty, which in turn is impacted by perceived product complexity. This perception is intimately linked with the consumer knowledge about a specific subject (Choudhury et al., 1999). Insurance products, namely life insurance as Real commercialize are known as being complex (Wiesböck et al., 2017), demanding from the customer a certain level of knowledge. Therefore, the objective is to test if the consumer's knowledge and their consequent perception about the product complexity as an influencer of online purchase creates the need for professional counselling **(H3)**.

Some attributes or antecedents presented on the offline interaction between the seller and the customer such as security, fastness, simplicity, bureaucracy, and others, might be perceived by consumers to be also presented on online purchase. As reviewed on other success cases, such Amazon or eBay, they made possible to augment the trust on this new online environment (Lin, 2003). Fastness and simplicity attract customers for online shopping (Young Kim & Kim, 2004). Therefore, it is crucial to understand whether there is any significant difference of opinion between customers who had already purchased online from those who had not. In contrast with customers who had never purchased online, those who have believe more firmly that there are attributes resulting from an offline purchase which may be also present on online purchases. **(H4)**.

The technology enabled that the online purchase can be made anywhere and every time: people are able to do it from their smartphone or tablets, without necessarily having to use their desktop computer, and m-commerce (Rose et al., 2011) represents an important part of the online commerce. Customers are questioned about their level of agreement. Finally, customers are requested to rank RVC according to its perceived complexity level.

4.2.3 Sampling frame

Real Vida Condutor was underwritten by 133 people, during the QSP Summit. From the data base it was possible to access some demographic characteristics of this population, such as Age and Gender. The Table 9 below describes the information mentioned above.

Table 9: RVC purchasers' demographics

		n	%	Mean	SD
Age				45.41	11.668
Gender					
	Male	61	45.9%		
	Female	72	54.1%		

n=133

From those 133 people that have underwritten RVC, 77 completed the survey, obtaining this way a response rate of 57.89%. According to the study of Baruch and Holtom (2008), that analysed the survey response rate of 490 different studies, the average response rate for researches that gather data from individuals is 52.7%, while for studies that collect data from organizations is 35.7%. Thus, the response rate obtained from these individuals is not too distinct from the average presented by the latter's study.

Table 10 summarizes some of the survey respondent's demographics. The level of education shows that most of the respondents have high education levels (85.7%), and hence proving the leading audience that attends QSP Summit, as referred on chapter 4.2.1.

Table 10: Survey respondents' demographics

		n	%	Mean	SD
Age				44.23	11.096
Gender					
	Male	35	45.5%		
	Female	42	54.5%		
Education					
	High school	7	9.1%		
	Technical-vocational courses	4	5.2%		
	Bachelor	53	68.8%		
	Master	13	16.9%		
Children					
	Yes	61	79.2%		
	No	16	20.8%		
Age of Children				14.46	

n=77

4.2.4 Descriptive Statistics

In order to explore the collected data, descriptive statistics were used with the purpose of complementing the results obtained from the tests of the hypothesis tests.

Firstly, it was necessary to perceive respondents' experience on purchasing insurance products. Through the results presented on Table 11 it is possible to conclude that most of

the RVC purchasers had already purchased other insurance products.

Table 11: Descriptive Statistics, 6 - Insurance buyer experience before RVC

	Frequency	Percentage
No	6	7.8
Yes	71	92.2
Total	77	100.0

In fact, it was interesting to analyse the age profile of the six respondents who had never purchased an insurance product (Table 12). The customers who had any purchasing experience are younger than the average, which is 44.23 from those who completed the survey, and 45.41 from all the purchasers.

Table 12: Descriptive Statistics, 6 - No experience of purchasing insurance products/age

Age	Frequency	Percentage
23	1	16.7
24	2	33.3
25	2	33.3
38	1	16.7
Total	6	100.0

The most used distribution channel is the banking channel, followed up by Agents and Brokers (see Table 13). The online channel shows a higher percentage than what would be expected (39.4%). Only one customer referred that he had purchase from "Other" distribution channel than the ones presented, which he stated, "Via telephone".

Table 13: Descriptive Statistics, 7 - Distribution channels used

Distribution Channel		Frequency	Percentage
Agent or broker	No	30	42.3
	Yes	41	57.7
Online sale	No	43	60.6
	Yes	28	39.4
Banking Channel	No	28	39.4
	Yes	43	60.6
Insurance Balcony	No	53	74.6
	Yes	18	25.4
Other	No	70	98.6
	Yes	1	1.4

Customers were asked to compare their RVC purchasing experience with a traditional purchase experience. The number of customers who answered is 63 (<77), because 6 of them had not any purchasing experience, while the other 8 customers had only purchased insurance products via an online channel, and hence both experiences could not be compared. As indicated in Table 14, only part of the respondents (27.0%) felt that the online experience was neither beneficial nor prejudicial compared to a traditional experience.

Table 14: Descriptive Statistics, 9 - Purchasing experience Online vs Offline Purchase

	Frequency	Percentage
Neutral	17	27.0
Beneficial	24	38.1
Very beneficial	22	34.9
Total	63	100.0

The overall customer experience, regardless of any distribution channel, was also object of discussion (Table 15). It was directed to all customers who responded to the survey, and it only created two distinct groups: Satisfactory and Very satisfactory, what highlights the good experience associated to RVC online purchase.

Table 15: Descriptive Statistics, 10 - RVC Customer Experience

	Frequency	Percentage
Satisfactory	25	32.5
Very satisfactory	52	67.5
Total	77	100.0

Although the counselling need created several importance classes, the observations are concentrated, since two of the classes recorded only one observation each (see Table 16). In general, people continue to think that professional advice is important when purchasing an insurance product.

Table 16: Descriptive Statistics, 11 - Counselling need when purchasing an insurance product

	Frequency	Percentage
Not important	1	1.3
Little important	1	1.3
Neutral	23	29.9
Important	42	54.5
Very important	10	13.0
Total	77	100.0

The six attributes were classified according to a Likert scale of 5 elements. The fastness and safety of the process were the characteristics that caused most agreement between the customers, as seen in Table 17.

Table 17: Descriptive Statistics, 12 – Attributes of RVC purchase

Attribute		Frequency	Percentage
12.1 I felt **Safe** purchasing online	Agree	34	44.2
	Completely Agree	43	55.8
12.2 I felt an **Active Part** on this process	Neutral	1	1.3
	Agree	47	61.0
	Completely Agree	29	37.7
12.3 I considered the process **Simple**	Neutral	1	1.3
	Agree	40	51.9
	Completely Agree	36	46.8
12.4 I considered the process **Fast**	Agree	30	39.0
	Completely Agree	47	61.0
12.5 I felt **Responsibility** on the information provided, given I had any attendance on the process	Completely Disagree	1	1.3
	Disagree	1	1.3
	Neutral	10	13.0
	Agree	45	58.4
	Completely Agree	20	26
12.6 I considered the process **Bureaucratic**	Completely disagree	28	36.4
	Disagree	44	57.1
	Neutral	2	2.6
	Agree	2	2.6
	Completely Agree	1	1.3

None of the respondents disagreed with the possibility of purchasing an insurance product from anywhere, whether it be by smartphone, tablet, computer, or another smart gadget (Table 18). However, 16.9% of the customers responded that they neither disagree nor agree.

Table 18: Descriptive Statistics, 13 - Online purchase can be made everywhere

	Frequency	Percentage
Neutral	13	16.9
Agree	39	50.6
Strongly agree	25	32.5
Total	77	100.0

H2 consisted of testing if RVC overall CE influenced the repurchase intention via

an online channel. However, all the customers made clear that their intention was to repurchase from the internet, and only one group was formed, without any differences to study (Table 19). It is possible to conclude that a Satisfactory or Very satisfactory customer experience led to a repurchase intention.

Table 19: Descriptive Statistics, 15 - Online insurance repurchase intention

	Frequency	Percentage
Yes	77	100.0
Total	77	100.0

None of the respondents considered the product Complex or Very complex (see Table 20). As a matter of fact, given that RVC was a pilot test it was designed to be simple and comprehensive to customers, even though many had not any insurance knowledge.

Table 20: Descriptive Statistics, 16 - RVC Complexity Level

	Frequency	Percentage
Normal	6	7.8
Simple	34	44.2
Very simple	37	48.1
Total	77	100.00

The product complexity as an influent element of online purchase is an important factor that will allow a more detailed analysis, as two distinct groups were formed. Most of customers (59.7%) understand that product complexity influences online purchase (Table 21).

Table 21: Descriptive Statistics, 17 - Product complexity influences online purchase

	Frequency	Percentage
No	31	40.3
Yes	46	59.7
Total	77	100.0

4.2.5 Data Analysis

In order to try to understand what drives consumers to purchase online and their perception of this new sort of interaction with the insurer and its impact, T-tests, One-Way ANOVAs, and a Contingency Table (Chi-square Test) were executed on the survey variables and questions, using the software Statistical Package for the Social Sciences (SPSS). The type of test used depended on the characteristics of the variable/question, and in what was meant to prove. Independent T-test were performed when independents variables were constituted

by two and only two groups, and its goal was to compare the means between two unrelated groups on the same dependent variable. When the independent variable is formed by three or more sample groups, One-Way analysis of variance (ANOVA) were performed, to determine whether there were any statistically significant differences between the means of three or more independent groups. The Chi-square test main objective is to understand if there is any association between two categorical variables (Sabine Landau, Landau, Everitt, & Everitt, 2004).

The three referred statistical tests, test two different hypotheses respectively:

$$\begin{cases} \text{H0: } \mu1=\mu2 \text{ (T-Test)} \\ \text{H0: } \mu1=\mu2=...=\mu k \text{ (ANOVA)} \\ \text{H1: } \exists i, j\mu1\neq\mu2 \end{cases}$$

$$\begin{cases} \text{H0: "Variable 1 is independent of Variable 2" (Chi-Square Test)} \\ \text{H1: "Variable 1 is not independent of Variable 2" (Chi-Square Test)} \end{cases}$$

The decision criteria depends on the significance level taken to perform the tests, which on this research is 5%, meaning that when the p-value is under 5%, we have statistical evidence to reject H0, and the result is presented accordingly to the test performed. Briefly:

$$\begin{cases} \text{P} < \alpha, \text{H0 is rejected} \\ \text{P} \geq \alpha, \text{H0 is not rejected} \end{cases}$$

According to the Central Limit Theorem (CLT), it is possible to perform a t-test to compare means by approximation, if there is a large sample (n≈>30) for each sub-sample corresponding to each category of the independent variable and although the dependent variable is an ordinal variable.

There are some specific rules that must be fulfilled to perform ANOVA. The first rule is the independency of observations. This rule was assured since each respondent only had one opportunity to answer each question. The second rule that must be met is the dependent variable to be normally distributed for each category of the independent variable[3]. This criterion can be violated when the data is approximately normal, as ANOVA is robust to violations of normality, and still provides valid results. The third and last rule that must be met is the homogeneity of variances, which can be accessed by the Levene test. In case there are significant differences between sample groups, the Tukey's Post-hoc test is conducted to find the specific sample groups where significant differences were found.

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[3] Shapiro-Wilk test were performed to test normality, and can be found on Appendix 3

5. Findings

The objective of this chapter is to make an analysis of the qualitative and quantitative data collected for the purpose of this report. Therefore, the first part consists of analysing the interviews, which are part of the qualitative study, considering the reviewed literature. The results of the interviewees are orderly organized according to the different impacts and their explanation. This first analysis is an attempt to answer the first RQ. The second part of the chapter entails the analysis of the survey, part of the quantitative study, bearing in mind the hypothesis created, and aiding answering the second RQ.

5.1 Qualitative Study – Analysis of the interviews

In order to try to introduce the topic of digitalization, the three respondents were asked about what they acknowledged about this same concept. The responses obtained were similar, being able to identify common components (see Table 22), which leads us to believe that the concept is starting to become ingrained within the company, given its concern of spreading a technological thought between employees.

Table 22: Interviewees digitalization definition

Concept	Components Identified	Answers obtained	Inter-viewee
Digitalization	Automate/Parameterize	"…using information that is computerized/digitized to **automate** processes."	I1
		"Digitalization is leaving to technology, information and processes that can follow certain rules and criteria to be **automatically** performed."	I2
		"…leave the tasks that really matter to human achievement and use technology for **parameterizable** things."	I3
	Advantages	"…efficiency and effectiveness gains at the operational level."	I1
		"…optimization of procedures and cost efficiency."	I2
		"… besides allowing time saving, allows you to become more competitive."	I3

Furthermore, despite the recognition and advantages associated to digitalization, the three admit that there is still a long way to go on the insurance industry, although the company has already started to take this topic forward.

Impacts of Digitalization

In the sense of trying to perceive the impacts of digitalization of the business process through the adoption of a new insurance policy issuance system, it was asked to the Planning and Innovation Director what were the main impacts resulting from the implementation of the latter (Figure 14). The interviewed explained some of the impacts, while the other two interviewees explored the effects on their department.

Figure 14: Impacts of digitalization identified by the interviewee
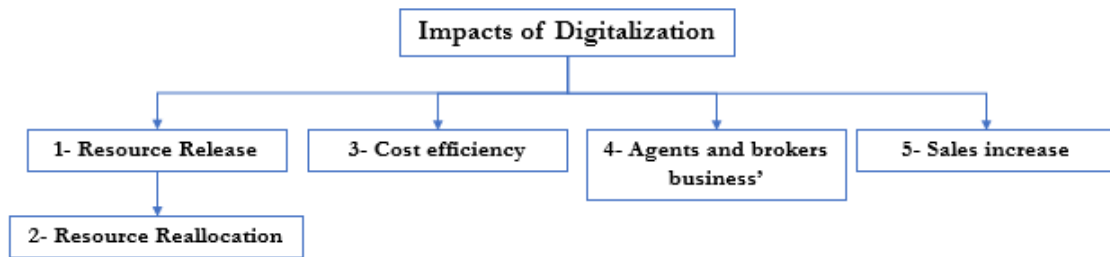
First impact - Resource release

Figure 15: Different levels of resource release identified by the interviewee
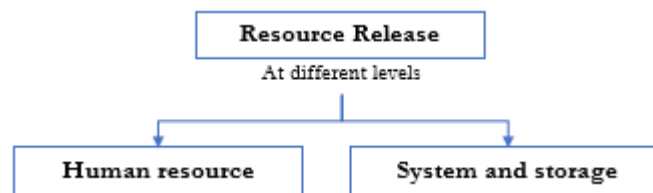
The interviewee (I2) referred that the release of resources was the first major impact noticed in several sections of the company (Figure 15). At system and storage level because as stated "…scanning and photographing proposals and documents to become available on a digital format turned the system heavy, while currently the proposals enter directly in the system through the new intermediation platform.". Also, a human resource release was witnessed, and the same interviewee provided the reasons for such occurrence (see Table 23).

Table 23: Human resource release in the different Departments identified by the interviewee

Department	Reasons for HR release – Responses obtained
LRS Department	"Automatic issuance of insurance policies, that presently do not to be reviewed by Life and Risk Subscription Department"
Commercial Agents	"Commercial Agents do not need to pick up personally from agents and brokers insurance documentation"
Administrative Commercial	"…they were responsible for registering internally most of the total proposals…nearly 65%, and currently, with the adherence of agents, 85% of the proposals are registered by the latter on the intermediation platform, meaning that they were in part released from this work."

The same interviewee also states that "At the moment, 60% of the production is taking place without any intervention within the company". Regarding human resources release on Operations Department, its director explains that "Before, all insurance proposals went through the subscription department, both proposals that today were in a position to be immediately accepted and issued, and those that were not." Moreover, the interviewee states that there was a need to compare the information that was previously inserted in the system between the digitized and the physical proposal. Therefore, there was an added burden in the Department, requiring additional resources, and from the moment the online issuing process started that work overload ceased. The human resource release was immediately noticeable, states the interviewee, "since 60% of the insurance policies started to be automatically issued, and therefore not issued in the Area.". Consequently, a direct release of resources was verified: "Logically, this is a direct relationship, there is no reason why employees should not be freed." The Commercial Agent meets the statements of the first interviewee, revealing what kind of human resource release this Area was aim of: "Previously, me and other Commercial Agents, were limited in terms of time because we needed to pick up proposals and bank checks from our agents. We kept going from one place to another just to gather physical documentation with no extra value. And while we are concerned about this, we tended to forget other important things.". The head of Planning and Innovation Department (I2) explains that with the new process physical proposals were no longer necessary. However, although bank checks were also aim of collection in the past, the decision of suspending it as a method of payment, is not directly related to the new system as the insurance proposals. The interviewee justifies it by stating "… it had underpinned a lengthy process of issuing the insurance policy, the Commercial Agent had to collect and deposit the bank check, the Treasury and Collection Department had to validate it…there was an entire manual process inherent.". She also added that by introducing a fully automated process characterized by being "fast and completely digital", staying dependent on a lengthy means of payment is unwise, "something material would be conditioning everything else that is electronic".

Second Impact – Human Resource Reallocation

Figure 16: Consequence of resource release identified by the interviewee

Other noticeable impact and a consequence of resource release is resource

reallocation, as indicated in Figure 16. After perceiving that due to digitalization resource release was possible, those same resources as regard of workforce were meant to be reallocated for more useful functions. The Operations Department besides counting on LRS Department, also manages the Customer Support Department (CSD), and one of the main advantages of releasing resources, was to "transfer to the Customer Support Department, people who were issuing insurance policies that could be automatically issued, given that it followed normal parameters.", states the Operations Director (I1). CSD, after a certain level of questions and doubts raised by customers, has to send them to the different sections, so that they can return their technical support on these issues, given their limited technical capacity. The Operations' Director explains that this way, the employees allocated to the CSD can directly support this Area: "…the workers can clarify these issues through their know-how, avoiding the unnecessary circulation of information…". The latter also adds that "During the previous process, we were not providing the level of service necessary to grant an outstanding service to the customer, and this was due to the unavailability of human resources with the certain knowledge to promptly satisfy the CSD.". The reallocation of resources was also possible for Commercial Agents, but this time it was not about transferring employees, but rather performing other tasks. The Commercial Agent asserts that "…currently, we have more available time to be close to Agents and brokers, and to watch them in other ways." The latter also adds that in her opinion it means a gain for all parties, and specifies in which type of activities she invests her time: "I invest much of my time on Agents and brokers, giving them training, something they can use to boost their business". The opinion of the Head of Innovation (I2) goes along the latter, as she states that this time release allows Commercial Agents to perform more important tasks through the better management of their teams: "They managed to focus their efforts on effective commercial work and not on administrative work, which was what they were ending up doing.". Therefore, they are providing a more personalized monitoring of their portfolios. She also mentions that "… beyond providing more training to their agents, this also allowed them to hire smaller agents, leading to the decentralization of the production from a smaller number of agents to a greater number of the latter.".

Third Impact – Cost efficiency

Besides all indirect cost efficiency allowed by the new business process, there is some cost efficiency that is directly related to the latter. The Head of Planning and Innovation explained that physical proposals that were sent to the company by Agents and brokers and

now are not, is intimately linked to this cost efficiency: "The company is contractual linked with a service provider, where our archive is kept with all possible documents, ranging from insurance proposals to accounting documents.". This type of service involved a storage cost: "…we have been paying a certain amount of money for this service, and whenever necessary we can access the documents". As she points out that "Presently, with the new process, it is no longer necessary to use this service provider for the implemented products.".

Fourth Impact – Agents and brokers business'

Both the Commercial Agent (I3), and the Director of the Planning and Innovation Department (I2), were questioned about the main impacts Agents and brokers felt concerning the implementation of the new system. Those are identified on Table 24.

Table 24: New process characteristics

Components Identified	I2	I3
Fastness	"huge simplification of the process, since the proposal can be recorded and issued **quickly** and at **any time**"	"The **fastness** of the process is one of the main changes since it is possible to issue an insurance policy in a short period of time."
Anytime issuance		"They can issue an insurance policy at **any time**, given that it is viable to issue at a timetable that is not compatible with the company schedule"

The Commercial Agent (I3) explains that these characteristics are very important for life insurance customers because according to the latter "Sometimes, life insurance policies, such as household insurance, are needed from one moment to another, and we can promptly satisfy the customer". The Head of Planning and Innovation (I2) adds that besides that "…they can sell an insurance policy without necessarily having the customer before them, for example filling the online proposal through a telephone call.". Some process gaps were eliminated since the intermediation platform performs the validation of the inserted data, whereas previously agent and brokers, according to the Commercial Agent, "… had proposals returned, given filling errors or even because some field was not filled.". Other important feature mentioned by the Planning and Innovation Director is that the "Commissioning of Agents is received earlier, given the speed of the process.".

Fifth Impact – Sales increase

As stated on the chapter 4, the core product of the company is under analysis in order to compare sales between both processes, as well as present its growth. The time lapse of analysis is presented below in Figure 17.

Figure 17: Time period of sales analysis
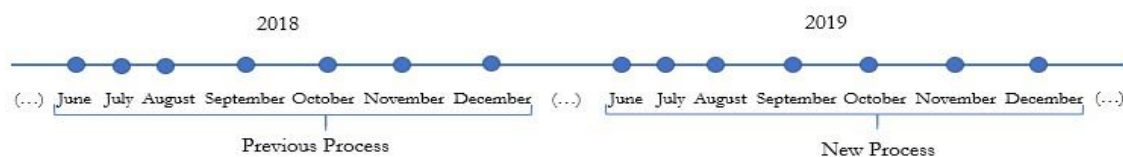
In order to help conducting the sales analysis, Table 25 explains the difference between the different states of insurance policy issuing.

Table 25: Insurance policies states

Alternative	Meaning	
	Previous Process	**New Process**
1	Proposal to be reviewed by Life and Risk Subscription Department – "Superficial" risk analysis and concordance between proposals	Insurance policy automatically issued
2	Proposal to be reviewed by Life and Risk Subscription Department - Subject to risk analysis and concordance between proposals	Proposal to be reviewed by Life and Risk Subscription Department - Subject to risk analysis

Firstly, an analysis is conducted on the number of insurance policies that have started to be automatically issued.

Table 26: Insurance policies states - Alternative 1

Alternative 1	June	July	August	September	October	November	December	Total
Previous Process (2018)	87	104	102	74	134	137	121	759
New Process (2019)	255	436	328	375	430	462	422	2708
Growth Rate	193%	319%	222%	407%	221%	237%	249%	257%

From Table 26 one can conclude that the months under analysis recorded a huge growth. This increase in the number of insurance policies automatically issued, this is, fulfilling the Alternative 1 for the new process, is mainly justified for two reasons, advances the Director of Planning and Innovation: "Firstly, it is related to the general growth of the production, which in turn increased the number of insurance policies that did not resort a risk analysis from LRS Department. Secondly, the scoring for risk criteria was extended, making it easy to respect the scoring and the risk criteria.".

Table 27: Insurance policies states - Alternative 2

Alternative 2	June	July	August	September	October	November	December	Total
Previous Process (2018)	185	176	163	156	161	186	175	1202
New Process (2019)	128	214	228	237	305	292	281	1685
Growth Rate	-31%	22%	40%	52%	89%	57%	61%	40%

In Table 27 representing the 2nd alternative, it is noticeable that the number of policies that were subject to risk analysis by the Subscription Department also increased throughout the seven months (except for June). However, this figure (40%) was lower than the figure (257%) registered on insurance policies automatically issued.

Table 28: Summary of the sales analysis

	Previous Process	New Process	Growth Rate
Number of Agents (1)	387	387	0
Number of Policies Issued	1961	4393	124%

The overall growth of the issuance of insurance policies regardless their origin, whether they were automatically issued by Agents and Brokers or reviewed by the Subscription Department and then issued, was 124%, for the same product.

It is important to understand what the generalized growth was due to. The interviewee #2 opinions' goes towards that of the Commercial Agent (I2). The first refers that the implementation of the policy issuance containing a digital signature played an important role, however, a greater commercial effort is also considered important because "…in other non-core products we also verified some sales growth.". The Commercial Agent claims that "… the tool created the possibility to boost the sales, although it is not everything. It represents a lot of work done by the Commercial Agent.". The latter also adds that "A life insurance Commercial has a significative weight on the customer relationship, but of course, the tool made it possible to issue proposals at any time."

5.2 Quantitative Study – Bivariate Analysis

In the sense of trying to perceive if there is any significant difference between people of different ages, this demographic characteristic was tested with some of the variables.

Table 29: T-test for respondents' Age in terms of Online direct sale experience

Online direct sale experience	N	Mean	Std. Deviation	T	Sig.	Levene Sig
No	43	48.40	10.586	2.893	.005	.128*
Yes	28	41.64	7.866			

* Independent Sample T-test for homogeneous variances
Dependent Variable: Age

The value of T is 2.893, which allow us to reject the null hypothesis of equal means with a p-value of .005 (<sig. level .05). This means that there is a statistically significant difference between the mean ages of the different levels of online direct sale experience. People who had never purchased online are more likely to be older (M=48.40; SD=10.586) than those who had already bought from this distribution channel (M=41.64; SD=7.866).

Table 30: One-way ANOVA for respondents' Age in terms of (16; 13; 11; 9)

		Mean	Std. Deviation	F	Sig.	Levene Sig (mean)
16. RVC Complexity Level	Normal	56.40	13.939	4.672	.012*	.478*
	Simple	44.76	9.413			
	Very Simple	41.54	10.810			
13. Online purchase can be made everywhere	Neutral	53.23	11.366	7.787	.001*	.216*
	Agree	44.31	10.645			
	Strongly Agree	39.44	8.837			
11. Counselling need to purchase an insurance product	Not important	35.00	.	6.444	.000*	.708*
	Little important	43.00	.			
	Neutral	38.13	9.823			
	Important	44.90	9.517			
	Very important	44.23	10.824			
9. RVC CE relatively to Off-line CE	Neutral	52.29	10.457	5.774	.005*	.515*
	Beneficial	45.38	9.440			
	Very beneficial	41.95	8.780			

*ANOVA One-way for homogeneous variances
Dependent Variable: Age

There was a statistically significant difference between groups for all the four tests as demonstrated by one-way ANOVA (F=4.672; p = .012), (F=7.787; p = .001), (F=6.444; p =

.000) and (F=5.774; p = .005). This suggests that there is a significant difference in the mean age between the different opinions given, in each question. In order to perceive in which groups there is a significant difference, the Tukey's Post-hoc test has been conducted.

Table 31: Multiple comparisons test for respondents' Age in terms of (16; 13; 9)

		Normal	Simple	Very Simple
16. RVC Complexity Level	Normal	-	.057	.010
	Simple	-	-	.398
	Very Simple	-	-	-
		Neutral	Agree	Strongly Agree
13. Online Purchase can be made everywhere	Neutral	-	.022	.001
	Agree	-	-	.158
	Strongly agree	-	-	-
		Neutral	Beneficial	Very beneficial
9. CE Online vs Offline purchase	Neutral	-	.064	.004
	Beneficial	-	-	.446
	Very beneficial	-	-	-

Tukey's Post-hoc test
Not conducted for #11 since two of the groups only recorded one observation each

The Tukey post hoc test revealed that Age was statistically significantly higher for people who think RVC complexity level is Normal (M=56.40; SD=13.939) than for people who think the product is Very simple (M=41.54; SD=10.810; p = .010). There was no significant statistical difference between the Normal and Simple groups (p = .057) and between the Simple and Very simple groups (p = .398). The other Tukey post-hoc test disclosed that Age was statistically significantly higher for people that are Neutral about the assumption that online purchase can be made everywhere (M=53.23; SD=11.366), compared to people who Strongly agree that online purchase can be made everywhere (M=39.44; SD=8.837; p = .010) and with people who Agree (M=44.31; SD=10.645; p=.022). There was no significant statistical difference between the Agree and Strongly agree groups (p = .158). The last test also revealed that Age was statistically higher for people who are Neutral about online customer experience exceeding offline customer experience (M=52.29; SD=10.457; p=.004) than for people who think OCE is very beneficial compared to Offline CE (M=41.95; SD=8.780; p=.004). No significant statistical difference was found between the Neutral and Beneficial (p=.064), and between the Beneficial and Very beneficial (p=.446).

From descriptive statistics one could conclude that most part of the respondents perceived their RVC experience as beneficial when comparing to a traditional purchasing experience, and only part of them saw it as neutral, which in part proves **H1**. Despite that, it was interesting to understand if there was any relationship between customers' opinion of RVC overall CE and RVC CE relatively to Offline CE.

Table 32: Contingency Table and Chi-Square Test

RVC overall CE vs RVC CE relatively to Offline CE

			9- RVC CE vs Offline CE			
			Neutral	Beneficial	Very beneficial	Total
10- RVC overall Customer Experience	Satisfactory	Count	12	7	4	23
		% of Total	19.0%	11.1%	6.3%	36.5%
	Very Satisfactory	Count	5	17	18	40
		% of Total	7.9%	27.0%	28.6%	63.5%
Total		Count	17	24	22	63
		% of Total	27.0%	38.1%	34.9%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig (2-sided)
Pearson Chi-square	12.264[a]	2	.002
Likelihood Ratio	12.258	2	.002
Linear-by-Linear Association	10.617	1	.001
N of Valid Cases [b]	63		

a.   0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.21.
b.   The number of Valid Cases is explained on Descriptive Statistics of #9

A significant statistically association between these variables was verified, $\chi_{(2)} = 12.264$, $p = .002$, which leads to reject H0. Therefore, RVC overall CE is not independent from RVC CE relatively to Offline CE. Observing the contingency table, it is noticeable that from people who classified RVC buying experience as Satisfactory (36.5%), most of them (19.0%) think RVC Experience is Neutral when comparing to an Offline CE. However, from people who think RVC CE is Very satisfactory (63.5%), most of them (28.6%) think RVC CE is Very beneficial when comparing to an Offline CE.

Table 33: Symmetric Measures

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.441	.002
	Cramer's V	.441	.002
N of Valid cases		63	

The symmetric measurement are tests for strength of association, that shows the size of the effect. As in this particular case a 2x3 contingency table was designed, one should look to Cramer's V test, whose value is .441, indicating a moderate to high effect.

H3: The consumer's knowledge and consequently its perception about the product complexity as an influencer of online purchase creates the need for professional counselling.

Table 34: T-test for respondents' level of counselling need to purchase an insurance product in terms of Online purchase being influenced by product complexity

Online purchase is influenced by product complexity	Mean	Std. Deviation	T	Sig.	Levene Sig
No	3.58	.807	1.738	.071	.191*
Yes	3.89	.674			

*Independent Sample T-test for homogenous variances
Dependent Variable: Counselling need

The value of T is 1.738, which does not allow to reject the null hypothesis of equal means, since the p-value is .071 (> .05 significance level). Therefore, there is no evidence that there is a significant difference between the means of the two levels of the "Online purchase is influenced by product complexity", and hence **H3** was not verified. Even though, one can instantly notice that the mean of counselling needed to purchase an insurance product for people who answered "No" for product complexity to influence online purchase (M=3.58; SD= .807) is lower than for those who answered "Yes" (M=3.89; SD=.674). This suggests that those who states product complexity does not influence online purchase finds it less necessary to be professional counselled when purchasing an insurance product from those who think product complexity influence online purchase, although it is not statistically significant.

H4: In contrast with customers who had never purchased online, those who have agree more firmly that there are attributes resulting from an offline purchase which may be also present on online purchases.

Table 35: T-test for Attributes in terms of online direct sale channel experience

	Online direct sale experience	Mean	Std. Deviation	T	Sig.	Levene Sig.
12.1 I felt **Safe** purchasing online	No	4.42	.499	-2.559	.013**	.023**
	Yes	4.71	.460			
12.2 I felt an **Active Part** on this process	No	4.33	.522	-.541	.591*	.882*
	Yes	4.39	.497			
12.3 I considered the process **Simple**	No	4.30	.513	-2.475	.016*	.624*
	Yes	4.61	.497			
12.4 I considered the process **Fast**	No	4.49	.506	-1.944	.056**	.003**
	Yes	4.71	.460			
12.5 I felt **Responsibility** on the information provided, given I had any attendance on the process	No	4.16	.754	1.380	.172*	.389*
	Yes	3.93	.604			
12.6 I considered the process **Bureaucratic**	No	1.88	.823	1.513	.135*	.589*
	Yes	1.61	.629			

*Independent Sample T-test for homogeneous variances
**Independent Sample T-test for not homogeneous variances
Dependent Variable: (12,1; 12.2; 12.3; 12.4; 12.5; 12.6)

In the 6 t-tests performed, it was found that for 12.1 and 12.3 the p-value was lower than the significance level .05. Respectively, t (69) = -2.559, p=.013; t (69) = -2.475, p=.016. Therefore, for 12.1 and 12.3, there is evidence that there is a significant difference between the means of the different levels of the independent variable. For 12.1 respondents that had never bought online (M=4.42; SD=.499) and for those who had (M=4.71; SD=.460). For 12.2 respondents that had never bought online (M=4.30; SD=.513) and for those who had (M=4.61; SD=.497). One can therefore conclude that customers who had already purchased online are more likely to agree that the process is safer and simpler from those who had never purchased an insurance from an online channel, making **H4** true for those attributes.

In order to conclude the data analysis, three more t-tests were conducted to compare the level of importance given to counselling need to purchase an insurance product (11), the level of agreement given to online purchase being made everywhere (13), and the perceived level of complexity of RVC (16), in terms of Online direct sale channel experience.

Table 36: T-test for (11,13, 16) in terms of Online direct sale channel experience

Question	Online direct sale experience	N	Mean	Std. Deviation	T	Sig.	Levene Sig
11- Counselling need to purchase an insurance product	No	43	4.16	.531	5.933	.000*	.070*
	Yes	28	3.29	.713			
13- Online purchase can be made everywhere	No	43	3.91	.718	-3.565	.001*	.557*
	Yes	28	4.46	.508			
16- RVC Complexity Level	No	43	4.21	.600	-2.934	.005*	.706*
	Yes	28	4.64	.621			

* Independent Sample T-test for homogenous variances
Dependent Variable: 11; 13; 16

For the three t-tests, the p-value was lower than the significance level .05. Respectively, $t(69)=5.933$, $p=.000$; $t(69)=-3.565$, $p=.001$; $t(69)=-2.934$, $p=.005$. Therefore, there is evidence of the presence of a significant difference between the means of the different levels of the independent variable.

The customers who had already purchase an insurance product online are more likely to consider the counselling need less important (M=3.29; SD=.713), to agree that online purchase can be made everywhere (M=4.46; SD=.508), and to consider RVC Very simple (M=4.64; SD=.621), than those who had never bought an insurance product online (M=4.16; SD=.351), (M=3.91; SD=.718), (M=4.21; SD=.600), respectively.

6. Conclusion

6.1 Discussion of the results

This report aims to examine the impact digitalization is causing on the insurance industry, and its analysis is based on a Portuguese insurance company, Real Vida Seguros. Consequently, and as previously referred, two research questions were raised:

1) What are the impacts of digitalization of business processes?
2) What are the impacts of digitalization (online purchasing) on customer interaction?

For each of the research questions the results previously displayed are going to be highlighted and related to the literature review.

In the first study, the information and results obtained through the interviews made to the three employees and being the main objective of this study to analyse digitalization, allow to conclude that digitalization is a recognized concept and it is being rooted in the company's culture. The definitions given by the interviewees match those of several authors such Bohnert et al. (2019); Brennen and Kreiss (2016); Savić (2019). However, all the interviewees agree that the company is still taking the first steps, and that digitalization can be further exploited.

With regard to the impacts that digitalization of business processes brings, or as explained by Albrecher et al. (2019), also seen as improvement of business processes as both resort of digital technologies and share similar objectives, one of the interviews identified its main impacts, which lead us to admit that digitalization creates advantages. Resource release was pointed out as an impact, either at systems level or human resources level. This advantage was also indicated by Albrecher et al. (2019). At systems level, given the storage level that was needed to execute the previous process, ranging from photographing documents to attaching them. The other two interviewees explored the human resource release on their Departments. One of them explained that the resource release her section was aim of was to free employees from their functions, given that previously the Department had to deal with all insurance proposals the company received, whether by a risk analysis or by concordance between the digital and physical proposal. The human resource the other interviewee mentioned was rather in time. Some of the functions performed by Commercial Agents included picking up insurance proposals or bank checks, and currently with the new issuance system it is not needed, and therefore their available time increased. One of the consequences of the resource released mentioned was resource reallocation, or as referred by Albrecher et al.

(2019) re-evaluation of workforce skills and consequent reallocation. This consequence is also considered an impact of digitalization. In the first case, the interviewee which had employees free of work, decided to transfer them to another critical section (Customer Support Department) which was being subject of high work pressure. This allocation was not made out of luck, but in the sense of taking advantage of the employees' skills. The other interviewee explained that her available working time was applied to spend more time around the Agents and brokers she was responsible for, giving them training. This allowed that the latter made use of her skills and avoided doing administrative work such as picking up insurance documentation. One of the most pursued impacts of digitalization and improvements of business processes according to several authors is cost-efficiency (Bohnert et al., 2019; Buavaraporn & Tannock, 2013). This new business process, besides reducing costs in an indirect way, also caused directly related cost efficiency: all the physical documentation was stored on a paid service provider, and currently for the implemented products on the new system there is no need to resort to it. Digitalization also had consequences on Agents and brokers business since the new insurance policy issuance system brought Agents and brokers the possibility to issue proposals in a more simplified way. They do not depend on the company's schedule, as they can issue an insurance policy at a timetable that might not be compatible to that of the insurer, and within a shorter period of time. One of the interviewees explained that timing is very important for life insurance business, and these features made possible to close businesses in a way before were not possible. The last noticeable impact that was mentioned was sales increase, recording nearly a 124% increase for the core product. A major part of the company production became automatically issued, nearly 60%, without any human interaction. Although the interviewees gave a good part of the credit to the new intermediation platform, they also explained that the sales increase was also due to a great commercial effort, given that the production of other non-core products also increased.

Regarding the second study that aimed to understand what are the impacts that online purchase cause on customer interaction, only a short percentage of the survey respondents' had never bought an insurance product before (7.8%), and those people's age were below the average purchaser age (44.23 from those who completed the survey). The most used distribution channels were the Banking channel (Bancassurance) and Agents and brokers, recording each nearly 60%, while the online channel surprisingly recorded 40% of consumers' use.

Among the demographic characteristics, age turned out to be an important factor

given that some significative differences were found between people of different ages. Respondents who had never purchased online are more likely to be older than those who already had. In addition, customers that were Neutral about their RVC experience being superior to a traditional experience are more likely to be older than the ones that considered it as Very beneficial. Age has also proved to be an important element concerning the level of professional counselling needed to purchase an insurance product. Furthermore, those who were Neutral about the possibility of purchasing an insurance product online from anywhere tend to be older than those who Agree or Strongly Agree. It was also noticed that customers who considered the complexity level of the product as Normal are older than those who think it is Very simple.

An effort was made to understand if as Shankar et al. (2003) stated on his study, consumers who choose an online service have higher chances of service satisfaction, or customer experience since it is the latter's antecedent (Rose et al., 2011), than those who purchase offline. Only a small part (27%) of the respondents claimed that their online purchasing experience of RVC was neutral comparing to an offline experience. The rest of the customers (73%), considered it as Beneficial or Very beneficial, hence moving towards the direction of the latter's study.

However, when addressing RVC customer experience to all customers regardless any other purchasing experience, they all believed it was Satisfactory or Very satisfactory. According to Rose et al. (2011) the customer experience has a direct effect on repurchase intention, and if the customer overall experience is positive, they will want to repurchase another product from the online channel. That was what happened, since 100% of the respondents revealed their intention of repurchasing an insurance product from an online channel. Additionally, an association between RVC overall CE and RVC CE versus Offline CE was found, and it is more likely that a customer who considers Satisfactory RVC CE to perceive as Neutral a comparison between both experiences. However, customers who think RVC CE is Very satisfactory find a comparison between both experiences Beneficial and Very beneficial.

About 67.5% of the respondents perceive the counselling need as Important or Very Important. Nearly 59.7% of the customers think online purchase is influenced by product complexity agreeing with Choudhury et al. (1999), that mentions that perceived product complexity is an important factor that drives consumers to purchase from an online channel. However, the consumer perception about the product complexity as an influencer of online

purchase does not create the need for professional counselling when purchasing an insurance product. This suggests that the level of counselling need for people who think online purchase is influenced by product complexity is not that different from those who think it influences online purchase. Yet, the customers who had already purchased via an online channel are more likely to consider the counselling need less important than those who had not. In order to decrease the need for professional counselling, websites are starting to incorporate chatbots which work as a virtual support interaction engine for customers (Albrecher et al., 2019; Eling & Lehmann, 2018).

In what regards to the attributes of the process, and although both parties considered that the attributes of an offline purchase were also present on an online purchase, the respondents who already had purchased online before RVC, are more likely to consider the process simpler and safer than those who had never purchased on the internet. Therefore, it is important to follow the steps of Amazon and eBay and augment the trust on this new environment for the insurance sector (Lin, 2003). In addition, it is necessary to make the process simpler.

Despite the fact that none of the respondents disagreed with the possibility of purchasing from anywhere (only a part was Neutral), customers who had already purchased from an online channel are more in agreement that it is possible to do it than those who had not. It is not by chance that respondents who had already purchased online are more likely to consider RVC Simpler than those who had never purchased from an online channel, although most of the customers considered it Simple or Very simple.

6.2 Limitations and future research

There are some limitations concerning the results presented on the discussion above, and for that reason they should be considered when analysing the results.

Regarding the first study, only three semi-structured interviews were performed and because of that only a few points in common were found, since each interviewee explored the impacts on its own department. Additionally, the impacts that were registered on the company might not be exactly replicated on other companies or sectors. For those reasons, it is suggested that this study be replicated only by those insurance companies that have adopted digitalization, aiming to identify common impacts between them, and not only in a single company.

In conclusion, it is also recommended and important that Real Vida Seguros continues to implement its new insurance policy issuance system in the remaining of its products

line, given the associated advantages already shown.

Concerning the second study, it targets a specific segment of customers, which are RVC purchasers. There is limitation at the sample size level, because the number of RVC purchasers was limited (133), and therefore the number of the survey respondents was consequently low (77). For that reason, some classes of answers registered few observations. In order to get more expressive results, the number of purchasers would have to be higher as well as the number of respondents. For future research it is recommended to target a broader sample of customers, and in this way obtain more expressive results about the customer interaction. Furthermore, the product was considered Simple or Very simple, and therefore the characteristics associated with its purchase process were to the customers' liking. It is also advised that in future this assessment targets different and more complex products. One important reminder is that although the product was made available in March 2019, and the survey was only redirected one year later, most of the customers still have their RVC policy active, or at least one other product of the company. Alongside a small reminder of the product addressed on the survey, this has made it possible to get responses from loyal customers.

In order to conclude, it is recommended that Real Vida Seguros starts selling online directly to its customers. As such, the company should bear in mind what was reviewed in this study so as not to raise conflicts between the different distribution channels and sell a broader range of products than those offered by Agents and brokers. Moreover, the company should invest on selling simple products such as Real Vida Condutor, which may not be on the Agents and brokers' best interest, given its simplicity and lower commissions as a consequence of lower product's price. These measures would also benefit the consumers as they may not perceive the product as complex and hence purchase online.

References

Abijith, A., Fosso Wamba, S., & Gnanzou, D. (2013). *A Literature Review on Business Process Management, Business Process Reengineering, and Business Process Innovation* (Vol. 153).

Aguilar-Savén, R. S. (2004). Business process modelling: Review and framework. *International Journal of Production Economics, 90*(2), 129-149. doi:https://doi.org/10.1016/S0925-5273(03)00102-6

Albrecher, H., Bommier, A., Filipović, D., Koch-Medina, P., Loisel, S., & Schmeiser, H. (2019). Insurance: Models, Digitalization, and Data Science. *SSRN Electronic Journal*. doi:10.2139/ssrn.3382125

Aldin, L., & de Cesare, S. (2009). *A comparative analysis of business process modelling techniques.* Paper presented at the UK Academy for Information Systems (UKAIS) 14th Annual Conference, Oxford, April 2009.

Aldin, L., & de Cesare, S. (2011). A literature review on business process modelling: New frontiers of reusability. *Enterprise IS, 5*, 359-383. doi:10.1080/17517575.2011.557443

Barrett, J. L. (1994). Process Visualization: Getting the Vision Right Is Key. *Information Systems Management, 11*(2), 14-23. doi:10.1080/10580539408964631

Baruch, Y., & Holtom, B. (2008). Survey Response Rate Levels and Trends in Organizational Research. *Human Relations, 61*, 1139-1160. doi:10.1177/0018726708094863

Bento, A. V. (2012, Abril). Investigação quantitativa e qualitativa: Dicotomia ou complementaridade? *Revista JA (Associação Académica da Universidade da Madeira), 64, ano VII*, 40-43.

Bergendahl, G. (1995). The profitability of bancassurance for European banks. *International Journal of Bank Marketing $V 13*(1), 17-28.

Berne, C., Garcia-Gonzalez, M., & Mugica, J. (2012). How ICT shifts the power balance of tourism distribution channels. *Tourism Management, 33*(1), 205-214. doi:https://doi.org/10.1016/j.tourman.2011.02.004

Bogdan, R. C., & Biklen, S. K. (1994). *Investigação qualitativa em educação: uma introdução à teoria e aos métodos*: Porto Editora.

Bohnert, A., Fritzsche, A., & Gregor, S. (2019). Digital agendas in the insurance industry: the importance of comprehensive approaches†. *The Geneva Papers on Risk and Insurance - Issues and Practice, 44*(1), 1-19. doi:10.1057/s41288-018-0109-0

Brennen, J. S., & Kreiss, D. (2016). Digitalization. In *The International Encyclopedia of*

Communication Theory and Philosophy (pp. 1-11).

Buavaraporn, N., & Tannock, J. (2013). Business process improvement in services: Case studies of financial institutions in Thailand. *International Journal of Quality & Reliability Management, 30*. doi:10.1108/02656711311299854

Carbone, L., & Haeckel, S. (1994). Engineering Customer Experiences. *Marketing Management, 3*.

Choudhury, V., Dumm, R., & Karahanna-Evaristo, E. (1999). *Consumer Channel Choices: The Role of Knowledge and Choice Uncertainty.* Paper presented at the AMCIS 1999 Proceedings.

Clement, J. (2020). Number of internet users worldwide from 2005 to 2019. Retrieved from https://www.statista.com/statistics/273018/number-of-internet-users-worldwide/

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*: SAGE Publications.

Damij, N. (2007). Business process modelling using diagrammatic and tabular techniques. *Business Process Management Journal, 13*(1), 70-90. doi:10.1108/14637150710721131

Damij, N., Damij, T., Grad, J., & Jelenc, F. (2008). A methodology for business process improvement and IS development. *Information and Software Technology, 50*(11), 1127-1141. doi:https://doi.org/10.1016/j.infsof.2007.11.004

Davenport, T. H. (1993). *Process Innovation: Reengineering Work Through Information Technology*: Harvard Business Review Press.

Davenport, T. H., Short, J. E., & I, S. S. M. C. (1990). *The New Industrial Engineering: Information Technology and Business Process Redesign*: FRANKLIN CLASSICS TRADE Press.

Dumas, M., Rosa, M. L., Mendling, J., & Reijers, H. A. (2013). *Fundamentals of Business Process Management*: Springer Publishing Company, Incorporated.

Dumm, R., & Hoyt, R. (2002). Insurance Distribution Channels: Markets in Transition. *Journal of Insurance Regulation, 9*.

Eling, M., & Lehmann, M. (2018). The Impact of Digitalization on the Insurance Value Chain and the Insurability of Risks. *The Geneva Papers on Risk and Insurance - Issues and Practice, 43*(3), 359-396. doi:10.1057/s41288-017-0073-0

Garven, J. R. (2002). On the Implications of the Internet for Insurance Markets and Institutions. *Risk Management and Insurance Review, 5*(2), 105-116. doi:10.1111/1098-1616.00014

Giaglis, G. M. (2001). A Taxonomy of Business Process Modeling and Information Systems

Modeling Techniques. *International Journal of Flexible Manufacturing Systems, 13*(2), 209-228. doi:10.1023/A:1011139719773

Gobble, M. M. (2018a). Digital Strategy and Digital Transformation. *Research-Technology Management, 61*(5), 66-71. doi:10.1080/08956308.2018.1495969

Gobble, M. M. (2018b). Digitalization, Digitization, and Innovation. *Research-Technology Management, 61*(4), 56-59. doi:10.1080/08956308.2018.1471280

Grover, V., Fiedler, K. D., & Teng, J. T. C. (1994). Exploring the success of information technology enabled business process reengineering. *IEEE Transactions on Engineering Management, 41*(3), 276-284. doi:10.1109/17.310142

Hammer, M. (1990). Reengineering work: Don't automate. Obliterate. *Harvard Business Review 68 (4)*, 104-112.

Hammer, M., & Champy, J. (1993). *Reengineering the Corporation: A Manifesto for Business Revolution*: Harper Business.

Harrington, H. J. (1991). *Business Process Improvement: The Breakthrough Strategy for Total Quality, Productivity, and Competitiveness*: McGraw-Hill Education.

Harrington, H. J., Esseling, E. K. C., Nimwegen, V., & van Nimwegen, H. (1997). *Business Process Improvement Workbook: Documentation, Analysis, Design, and Management of Business Process Improvement*: McGraw-Hill Education.

Imgrund, F., Fischer, M., Janiesch, C., & Winkelmann, A. (2018). *Approaching Digitalization with Business Process Management*. Paper presented at the Conference: Multikonferenz Wirtschaftsinformatik (MKWI), Lüneburg.

Laguna, M., & Marklund, J. (2013). *Business process modeling, simulation, and design*: Chapman and Hall/CRC.

Lawton, L. J., & Weaver, D. B. (2009). Travel Agency Threats and Opportunities: The Perspective of Successful Owners. *International Journal of Hospitality & Tourism Administration, 10*(1), 68-92. doi:10.1080/15256480802557283

Leiria, M. (2013). *Marketing De Seguros*: Escolar Editora.

Lin, C. (2003). A critical appraisal of customer satisfaction and e-commerce. *Managerial Auditing Journal, 18*, 202-212. doi:10.1108/02686900310469952

Malhotra, N. K., Nunan, D., & Birks, D. F. (2017). *Marketing research : an applied approach*.

Melão, N., & Pidd, M. (2000). A conceptual framework for understanding business processes and business process modelling. *Information Systems Journal, 10*(2), 105-129. doi:10.1046/j.1365-2575.2000.00075.x

Melero, I., Sese, F. J., & Verhoef, P. (2016). Recasting the Customer Experience in Today's Omni-channel Environment. *Universia Business Review, 2016*, 18-37. doi:10.3232/UBR.2016.V13.N2.01

Mentzas, G., Halaris, C., & Kavadias, S. (2001). Modelling business processes with workflow systems: An evaluation of alternative approaches. *International Journal of Information Management, 21*, 123-135. doi:10.1016/S0268-4012(01)00005-6

Meyer, C., & Schwager, A. (2007). Understanding Customer Experience. *Harvard business review, 85*, 116-126, 157.

Mooney, J. G., Gurbaxani, V., & Kraemer, K. L. (1996). A process oriented framework for assessing the business value of information technology. *SIGMIS Database, 27*(2), 68–81. doi:10.1145/243350.243363

Osterwalder, A., Pigneur, Y., & Tucci, C. (2010). Clarifying Business Models: Origins, Present, and Future of the Concept. *Communications of AIS, 16*. doi:10.17705/1CAIS.01601

Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: How to benefit from digitalization in practice. *International Journal of Information Systems and Project Management, 5*, 63-77. doi:10.12821/ijispm050104

Pensões, A. d. S. d. F. e. (2018). O mercado segurador português. Retrieved from https://www.asf.com.pt/NR/exeres/2C30E7C2-BB0F-4432-A48F-D93E0307A22A.htm

Pourshahid, A., Amyot, D., Peyton, L., Ghanavati, S., Chen, P., Weiss, M., & Forster, A. J. (2009). Business process management with the user requirements notation. *Electronic Commerce Research, 9*(4), 269-316. doi:10.1007/s10660-009-9039-z

Quivy, R., & van Campenhoudt, L. (2008). *Manual de investigação em ciências sociais*: Gradiva.

Regan, L., & Tennyson, S. (2000). Insurance Distribution Systems. In G. Dionne (Ed.), *Handbook of Insurance* (pp. 709-748). Dordrecht: Springer Netherlands.

Roeglinger, M., Denner, M.-S., & Püschel, L. (2017). How to Exploit the Digitalization Potential of Business Processes. *Business & Information Systems Engineering, 60*. doi:10.1007/s12599-017-0509-x

Rose, S., Hair, N., & Clark, M. (2011). Online Customer Experience: A Review of the Business-to-Consumer Online Purchase Context. *International Journal of Management Reviews, 13*(1), 24-39. doi:10.1111/j.1468-2370.2010.00280.x

Sabine Landau, B. S. E., Landau, S., Everitt, B. S., & Everitt, D. B. C. B. S. (2004). *A Handbook of Statistical Analyses Using SPSS*: Taylor & Francis.

Savić, D. (2019). From Digitization, through Digitalization, to Digital Transformation. *43/2019*, 36-39.

Seguros, E. (2019). Vendas de seguros: Agentes ganham quota, internet vale pouco. Retrieved from https://eco.sapo.pt/2019/09/08/vendas-de-seguros-agentes-ganham-quota-internet-vale-pouco/

Seth, P., & Sahay, A. (2016). *Distribution Channel Conflict in the Life Insurance Industry of India*.

Shankar, V., Smith, A. K., & Rangaswamy, A. (2003). Customer satisfaction and loyalty in online and offline environments. *International Journal of Research in Marketing, 20*(2), 153-175. doi:https://doi.org/10.1016/S0167-8116(03)00016-8

Stangl, B., Inversini, A., & Schegg, R. (2016). Hotels' dependency on online intermediaries and their chosen distribution channel portfolios: Three country insights. *International Journal of Hospitality Management, 52*, 87-96. doi:10.1016/j.ijhm.2015.09.015

Verhoef, P., Lemon, K., Parasuraman, A. P., Roggeveen, A., Tsiros, M., & Schlesinger, L. (2009). Customer Experience Creation: Determinants, Dynamics and Management Strategies. *Journal of Retailing, 85*, 31-41. doi:10.1016/j.jretai.2008.11.001

Wiesböck, F., Li, L., Matt, C., Hess, T., & Richter, A. (2017). *How Management in the German Insurance Industry Can Handle Digital Transformation*.

Young Kim, E., & Kim, Y. K. (2004). Predicting online purchase intentions for clothing products. *European Journal of Marketing, 38*(7), 883-897. doi:10.1108/03090560410539302

Zeier Röschmann, A. (2018). Digital insurance brokers—old wine in new bottles? How digital brokers create value. *Zeitschrift für die gesamte Versicherungswissenschaft, 107*. doi:10.1007/s12297-018-0413-6

Zellner, G. (2011). A structured evaluation of business process improvement approaches. *Business Process Management Journal, 17*(2), 203-237. doi:10.1108/14637151111122329

Web References

Seguros, E. (2019). Vendas de seguros: Agentes ganham quota, internet vale pouco. Retrieved from https://eco.sapo.pt/2019/09/08/vendas-de-seguros-agentes-ganham-quota-internet-vale-pouco/

Seguradores, A. P. S. (2019, October). Seguros em portugal - panorama do mercado segurador 18/19. Retrieved from https://www.apseguradores.pt/Portals/0/doc/numeros/SegurosEmPortugal2018-19_PT.pdf?ver=2019-10-29-121317-437

Lusa, A. (2020, May). Taxas de juro baixas vão persistir por mais tempo. Retrieved from https://observador.pt/2020/05/25/taxas-de-juro-baixas-vao-persistir-por-ainda-mais-tempo-diz-autoridade-bancaria-europeia/

Clement, J. (2020). Number of internet users worldwide from 2005 to 2019. Retrieved from https://www.statista.com/statistics/273018/number-of-internet-users-worldwide/

Pensões, A.S.F. (2018). O mercado segurador português. Retrieved from https://www.asf.com.pt/NR/exeres/2C30E7C2-BB0F-4432-A48F-D93E0307A22A.htm

Appendixes

Appendix 1 – Semi-Structured Interviews Scripts

Introdução

- ➔ Obrigado pela sua participação.
- ➔ O objetivo desta entrevista é perceber impacto do novo processo de emissão online sem assinaturas, como parte de uma investigação feita no âmbito do Mestrado em Gestão da Faculdade de Economia do Porto. A sua colaboração é essencial para o sucesso desta investigação. Todas as respostas são confidencias e anónimas, e serão apenas usadas para o propósito desta investigação.
- ➔ Não há respostas certas nem erradas, o objetivo é apenas perceber o seu ponto de vista.

Para ser possível analisar a entrevista esta irá ser gravada. Durante a gravação é possível desligá-la e voltar a ligar quando assim desejar.

Tem alguma questão antes de começar?

Questões introdutórias

Nas suas próprias palavras, diga brevemente:

- ➔ 1- Posição na empresa;
- ➔ 2- Idade;
- ➔ 3- Educação;
- ➔ 4- Tempo na empresa;
- ➔ 5- O que entende por digitalização.

Conteúdo

Departamento de Planeamento e Inovação

- ➔ 1- Que diferentes tipos de impacto, a implementação da emissão de apólices com assinatura digital causou (nomeadamente a nível de processos de negócio)?
- ➔ 2- O número de apólices emitidas automaticamente sem "análise de risco" aumentou consideravelmente. Este crescimento foi de cerca de 257% para o produto habitação de junho a dezembro de 2019 em comparação com o período homólogo em 2018. Em que medida é que acha que a emissão sem assinaturas contribuiu para este crescimento?

➔ 3- No produto habitação de 2018 para 2019 o número de apólices emitidas com análise de risco pelo Departamento de Subscrição Vida e Risco também aumentou. No entanto, a taxa de crescimento foi bastante inferior às apólices emitidas sem análise de risco, registando apenas um crescimento total de 40%. A que se deve este aumento não proporcional às apólices emitidas automaticamente?

➔ 4- Que vantagens para o mediador/agente pensa o novo processo ter trazido?

➔ 5- O que acontecia às propostas físicas que eram enviadas para a Real? Onde eram guardadas? Implicava algum tipo de custo?

➔ 6- A decisão de retirar os cheques com a introdução do novo processo de assinatura digital está intimamente relacionada? Se sim, explique o porquê.

➔ 7- Qual o impacto que a introdução desta medida provocou?

➔ 8- Os responsáveis comerciais eram muitas vezes responsáveis por ir recolher cheques/propostas aos seus agentes. O que mudou com a extinção desta ação?

Departamento Subscrição Vida e Risco

No processo anterior de emissão online utilizado pelos agentes e mediadores, a equipa tinha de analisar todas as propostas que chegavam pela aplicação tanto por análise de risco como por análise de concordância de dados entre propostas e assinaturas.

➔ 1- Qual a importância que era dada à análise da conformidade das propostas digitais com as propostas físicas?

➔ 2- Eram despendidos muitos recursos dada a necessidade de verificação de todas as apólices?

➔ 3- Com a implementação do novo processo a principal preocupação passou a ser analisar as propostas com análise de risco? Ou existe uma "maior" preocupação para além desta?

➔ 4- No produto habitação de 2018 para 2019 o número de apólices emitidas com análise de risco pelo Departamento de Subscrição Vida e Risco também aumentou. No entanto, a taxa de crescimento foi bastante inferior às apólices emitidas sem análise de risco, registando apenas um crescimento total de 40%. O que poderá estar relacionado com isto? (A maior abrangência dos critérios de risco poderá estar relacionada com isto?)

Responsável Comercial

- ➔ 1- Com a introdução do novo processo de emissão online sem assinaturas, o que sente serem as principais mudanças no dia-a-dia dos seus agentes?
- ➔ 2- E no seu dia-a-dia, enquanto líder de equipa o que sente ter mudado?
- ➔ 3- Qual é o feedback que tem recebido dos seus agentes em relação ao processo de emissão online sem assinaturas?
- ➔ 4- Como avalia a experiência dos seus agentes com o novo processo?
- ➔ 5- Quais os impactos que a introdução deste novo processo teve nas vendas dos seus agentes?
- ➔ 6- Quais as características do novo processo que privilegia em relação ao anterior? Considera que o tempo médio do processo de emissão diminuiu?

Conclusão

Existe alguma coisa que me esqueci de mencionar que considera importante?

Obrigado pela sua participação!

Appendix 2 – Survey for RVC customers

Impacto da Digitalização na interação com o cliente

Este questionário tem como objetivo perceber o impacto da digitalização na interação com o cliente, como parte de uma investigação feita no âmbito do Mestrado em Gestão da Faculdade de Economia do Porto. A sua colaboração é essencial para o sucesso desta investigação. Todas as respostas são confidencias e anónimas e serão apenas usadas para o propósito desta investigação. O questionário é de preenchimento simples e rápido. Em caso de dúvida, contacte - Manuel Guedes, e-mail: manuel.guedes@realvidaseguros.pt, contacto telefónico: +351934562525.

Em março de 2019, a Real Vida participou no QSP Summit., uma das mais relevantes conferências de Management e Marketing da Europa. Neste evento, promoveu um novo produto - Real Vida Condutor, um seguro com um processo de subscrição simples e inovador. Ao aderir ao seguro, o cliente tinha a oferta do primeiro trimestre. Caso o cliente aderisse à Promoção Exclusiva de Lançamento – "Amigo Convida Amigo", por cada apólice emitida a partir do e-mail enviado pelo cliente a um amigo, foi creditado um trimestre gratuito até ao máximo de 3 trimestres, sendo que o amigo também usufruía gratuitamente de um trimestre.

*Obrigatório

Secção 1 – Informações Demográficas

1 – Sexo*

☐ Masculino
☐ Feminino

2 - Idade*

☐

3 – Nível de Educação*

☐ Ensino Básico
☐ Ensino Secundário
☐ Curso Técnico/Profissional
☐ Bacharelato
☐ Licenciatura
☐ Mestrado

4 – Tem filhos?

☐ Sim
☐ Não

Se respondeu que "Sim", prossiga para a próxima pergunta. Se respondeu que "Não", prossiga para a Secção 2.

5 – Indique por favor a(s) idade(s)

☐

<u>Secção 2</u>

6 – Para além do Real Vida Condutor, já tinha tido outra experiência de compra de seguro? *

Se respondeu "Sim" avance para a próxima pergunta, caso contrário avance para a pergunta 10.

☐ Sim
☐ Não

7 – Como adquiriu o(s) seguro(s)? *

☐ Através de Agente/Mediador
☐ Venda Direta online
☐ Canal Bancário
☐ Balcão de seguradora
☐ Outro: especifique

8 – Outro: especifique

Se respondeu "Outro: especifique" na questão 7 indique a sua escolha, caso contrário avance para a pergunta 9.

☐

9 - Em relação a uma compra realizada num canal tradicional (não online), como avalia a sua experiência de compra do RV Condutor?

Se respondeu apenas "Venda Direta Online" na questão 7, prossiga para a questão número 10, caso contrário responda a esta pergunta.

Muito pouco benéfica	Pouco benéfica	Neutra	Benéfica	Muito benéfica

10 - Como avalia o processo de compra do RV Condutor? *

Muito insatisfatório	Insatisfatório	Neutro	Satisfatório	Muito satisfatório

11 - Como qualifica a necessidade de aconselhamento (ex: mediador) na compra de um seguro? *

Não importante	Pouco importante	Neutro	Importante	Muito importante

12 - Ao efetuar a compra do Real Vida Condutor, não existiu ligação presencial com a seguradora ou com um mediador. *

Classifique o nível de concordância com as seguintes expressões, em que 1 significa "discordo completamente" e 5 "concordo completamente".

	Discordo completamente	Discordo	Neutro	Concordo	Concordo Completamente
12.1 Senti-me seguro/a a adquirir online					
12.2 Senti-me parte ativa neste processo					
12.3 Considerei o processo simples					
12.4 Considerei o processo rápido					
12.5 Senti responsabilidade na informação prestada no processo, dado não ter acompanhamento no mesmo.					
12.6 Considerei o processo burocrático					

13 - A compra online pode ser feita de qualquer local*

Discordo completamente	Discordo	Neutro	Concordo	Concordo completamente

14 - Quão confortável se sentiu a comprar um seguro online? *

Nada confortável	Pouco confortável	Moderadamente confortável	Extremamente confortável

15 - Após a experiência do Real Vida Condutor, voltaria a adquirir seguros através de plataformas online? *

☐ Sim
☐ Não

16 - Como avalia o produto Real Vida Condutor? *

Muito complicado	Algo complicado	Normal	Simples	Muito simples

17 - A sua decisão para adquirir um seguro online é influenciada pelo grau de complexidade de produto? *

☐ Sim
☐ Não

Se respondeu "Sim", prossiga para a pergunta 18. Se respondeu "Não", chegou ao fim do questionário.

18 – Indique o motivo

Appendix 3 – Test for normality

Normality test for Online direct sale in terms of age

	7.2- Online direct sale	Shapiro-Wilk		
		Statistic	df	Sig.
2- Age	No	,986	43	,881
	Yes	,963	28	,408

Normality test for RVC CE vs Traditional CE in terms of age

	9- RVC CE vs Traditional CE	Shapiro-Wilk		
		Statistic	df	Sig.
2- Age	Neutral	,897	17	,061
	Beneficial	,969	24	,654
	Very beneficial	,972	22	,763

Normality test for level of counselling need to purchase an insurance product in terms of age

	11- Level of counselling to need to purchase an insurance product	Shapiro-Wilk		
		Statistic	df	Sig.
2- Age	Neutral	,927	23	,095
	Important	,978	42	,590
	Very important	,896	10	,200

Normality test for Online purchase can be made everywhere in terms of age

	13- Online purchase can be made everywhere	Shapiro-Wilk		
		Statistic	df	Sig.
2- Age	Neutral	,933	13	,374
	Agree	,959	39	,167
	Strongly agree	,952	25	,272

Normality test for RVC complexity level in terms of age

	16- RVC Complexity Level	Shapiro-Wilk		
		Statistic	df	Sig.
2- Age	Neutral	,843	6	,138
	Simple	,979	34	,727
	Very simple	,972	37	,452