UNIVERSITY of SOPRON | ALEXANDRE LAMFALUSSY FACULTY OF ECONOMICS

Doctoral Thesis

Eliminating the Conflict of Interest within the Insurance Distribution by introducing a customer-centric Remuneration Approach

Intended academic degree:
Doctor of Philosophy (PhD)

Author: Victoria Petsch, MA

Supervisor: Dr. Tamás Kovács PhD.

January 8th, 2022

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DISSERTATION EVALUATION

Eliminating the Conflict of Interest within the Insurance Distribution by introducing a customer-centric Remuneration Approach

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Abstract

The 2018 Insurance Distribution Directive (IDD) brings together the customer interest and the topic of inducements. The directive states that remunerating and incentivizing the insurance distributors should not in any way reduce the quality of servicing the customer. Not only the law emphasizes the change of the remuneration system, also acknowledged researchers in the field emphasize the customer-oriented insurance distribution.

This doctoral thesis challenges the current remuneration approach and investigates a change in the underlying key performance indicators (KPIs) for the insurance agents in order to receive a bonus payment or not. 523 insurance agents from eight insurance companies, four located in Austria and four located in Hungary, participated in an online survey. The results from the empirical study confirm that the conflict of interest within the insurance distribution process could be eliminated or at least reduced, changing the underlying KPI from a top-line performance approach (like sum of premium or number of policies) to a customer centric approach (like customer satisfaction). The agents estimate a positive change in sales results and simultaneously a positive change in customer satisfaction, when introducing a customer centric remuneration model. Differences in the acceptance of the customer centric remuneration approach exist between Austrian and Hungarian agents.

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List of Abbreviations

AI	Artificial Intelligence
A.D.	Anno Domini (“in the year of the Lord”)
B.C.	Before Christ
BI	Business Intelligence
CASIC	Computer-assisted survey information collection
COD	Ordinary Legislative Procedure
CSAQ	Computerized self-administered questionnaire
EEA	European Economic Area
EEC	European Economic Community
EIOPA	European Insurance and Occupational Pensions Authority
EMS	European Monetary System
EU	European Union
FMA	Financial Market Authority
GWP	Gross Written Premium
H1	Hypothesis 1
HUF	Hungarian Forint
IAIS	International Association of Insurance Supervisors
IBIPs	Insurance-based Investment Products
IDD	Insurance Distribution Directive
IMD	Insurance Mediation Directive
IPID	Insurance Product Information Document
IT	Information Technology
KID	Key Information Document
KPI	Key Performance Indicator

MiFID ..... Markets in Financial Instruments Directive

MNB ..... Magyar Nemezeti Bank

MTPL ..... Motor third party liability

OECD ..... Organization for Economic Co-operation and Development

PRIIPs ..... Packaged Retail and Insurance-based Investment Products

TFEU ..... Treaty of the Functioning of the European Union

Q&A ..... Questions and Answers

χ^2_{stat} ..... Statistical Chi-Square

χ^2_{crit} ..... Critical Chi-Square

XPRIMM ..... X Promoting the Reinsurance & Insurance Market by Media

I. INTRODUCTION

Insurance has a high relevance and an indispensable position in the economy and society. This is true today but also valid for past generations. The development of insurance is seen as a factor in human progress, providing security against uncertainties in life. A doctoral thesis focusing on the application of customer-centric remuneration models in modern insurance, needs to start with a historical look at the development of insurance. Understanding the past and the beginnings of what we have today, enriches the research.

The evolution of the fundamental principles of insurance started from 1000 B.C. recorded in the Rhodian Sea Law and leads to 1875 where the Industrial insurance in America was established (PRUDENTIAL INSURANCE COMPANY OF AMERICA, 1915, p. 3).

The early origin of insurance begun with the basic idea that individuals contribute to a communal fund, which is used in case of a necessity (Haines, 1926, p. 1). Haines (1926) leads back the beginning of insurance to the pre-historic times. He describes that humans were always seeking for companionship and protection. The tribal instinct of humans leads to the building of communities with tribal laws. During the history, the responsibility of the individual toward the community increased. The concept includes the security of the community against enemies in return of a certain payment or labor (Haines, 1926, p. 1). This development has some similarities to modern insurance.

The first application of an insurance contract was found in marine. In 1000 B.C. the Rhodian Sea Law stated that the value of the ship together with the cargo is secured if it is destroyed during a storm or other events that happen during the travel (PRUDENTIAL INSURANCE COMPANY OF AMERICA, 1915, p. 5). According to a Greek papyrus dated 17th of October 236 A.D the buyer of goods was protected against possible losses of the cargo. The ancient document describes the vessel, the cargo, the days of the voyage, and the destination in detail. The owner of the ship guarantees to land the cargo safely and owning the potential risks of the sea, therefore underwriting the cargo risk himself. On arrival, the owner of the ship receives the balance of the cargo and a special payment for the safe arrival, called the maritime premium. Marine insurance in its early forms is the starting point of insurance contracts existing nowadays (Haines, 1926, pp. 19–20).

Sometime before the Christian Era, the “Institute of Mana” was recorded in India. It says that the trader pays a charge when buying goods in return for securing the goods carried. This arrangement describes the payment made for a security, which is the security of insurance. Similar arrangements were seen in all sources of civilization, Egypt, India, Greece, and Rome. Under the Roman Empire, in 133 A.D., the “Collegia Tenuirum” was an association for the working and lower classes. A monthly payment secured each member with an honorable burial. Again, the trade of a payment for the security at a later stage is similar to the insurance nowadays. The “Collegia Tenuirum” shows the great importance of a mutual aid society (Haines, 1926, pp. 2–3; PRUDENTIAL INSURANCE COMPANY OF AMERICA, 1915, p. 6).

Looking at the early history of the development of insurance, a correlation to the church can be found. Back in the eight century, documents show that the church granted a “rent for life” in exchange for money. Church laws from 816 A.D. provided more details about those agreements. Similar payments were found in 1308 collected by the Archbishop of Bremen in exchange for securing 2.400 lives. In 1323 the contract was declared unserious and therefore not binding (Haines, 1926, p. 29). During the middle ages investing money in some kind of protection was very popular. Sometimes the duration was extended for two lives or for the lives of relatives. Occasionally in case of the death of the insured person, the property of the agreement was taken over by the children. Back then, the price of such an agreement was not calculated properly by actuaries or underwriters, as it happens nowadays, but it rather followed speculations and guesses (Haines, 1926, p. 80).

In 1347 an Italian document, found in the archive in Pisa, states that the practice of insurance became universal for all maritime nations at that time (PRUDENTIAL INSURANCE COMPANY OF AMERICA, 1915, p. 8). This shows the early global importance of insurance.

The second bigger area of application, after marine, was the railway industry. In 1845 using the railway was still experimental and therefore dangerous. Insurance was offered to protect the travelers against accidents. The Railway Passenger Assurance Co. was founded in 1848 with the purpose to cover railway accidents only. Only two years later the Accidental Death Insurance Co. was founded extending the coverage to any accident or external causes. This was the birth stone of the personal accident insurance. From this day on, the evolution of insurance started by offering protection in all kinds of areas (Haines, 1926, pp. 344–345).

Another milestone is the development of the actuarial science, which can be led back to 1725 to 1838. The actuarial science is the branch of applied mathematics which focuses on the analysis and risk calculation of life insurance. In Roman times “actus” was the instrument to create the writings and contracts for an insurance arrangement. The “actuary” was the person familiar with mathematics and

accounting responsible for setting up the contract. The rise of insurance business simultaneously increased the need to define the position of the actuary. The official status of an actuary is reserved for people recognized by actuarial institutions (PRUDENTIAL INSURANCE COMPANY OF AMERICA, 1915, p. 17).

The 18th century generated the establishment of insurance companies and insurance laws. The unbroken record show that insurance played a big part in society and business until today (PRUDENTIAL INSURANCE COMPANY OF AMERICA, 1915, pp. 20–22).

This excursion into the history of insurance shows the omnipresent importance of insurance for societies. The further research of this doctoral thesis focuses on the current application of the insurance law in order to reduce the conflict of interest. The big question is, if customer interest can be the underlying indicator to eliminate conflict of interest.

The starting point for this research work is the latest insurance regulation focusing stronger on the customer. The turbulent situation at the financial markets after the last financial and economic crisis has shown the necessity of an effective consumer protection. The insurance business, as one of the sectors in the financial market, needs to follow consistent regulations for the distribution of insurance products focusing on customer protection. The analysis starts by looking at the latest European Directive, the Insurance Distribution Directive (IDD). The IDD lays the foundation for true customer centric insurance distribution (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b). Not only the law emphasizes the change of the remuneration approach, also acknowledged researchers in the field. Studies of the behavior of agents in a distribution context motivated by various remuneration schemes over the last 30 years show expand this doctoral thesis. The third area for the research performed is about the contradictory incentivization, which is also addressed in the IDD. The principal agent theory is well known in the insurance context and seen as one explanation for the unethical behavior of the intermediary (Laffont & Martimort, 2002, p. 2). The purpose of this research is to identify if a remuneration system can align the interest of the intermediary, the customer, and the insurance company and therefore eliminate the conflict of interest.

The empirical research of this doctoral thesis focuses on a potential customer centric remuneration model to eliminate the conflict of interest in insurance sales. The following research questions lead the empirical study:

- Can the conflict of interest within the insurance distribution process be eliminated, changing the underlying key performance indicator (KPI) from a top-line performance approach (like sum of premium or number of policies) to a customer centric approach (like customer satisfaction)?
- How will agents accept and appreciate a customer centric remuneration approach?
- How will agents estimate their own or the companies' sales performance, introducing a customer centric remuneration approach?
- How will the results differentiate between Austria and Hungary, rural and city, high and low performing agents?

The following hypotheses can be stated:

H1: Tied agents favor the customer centric remuneration approach over top-line performance driven remuneration.

H2: Tied agents estimate a positive change in their own sales performance (= sum of premium sold) and simultaneously a positive change in the customer satisfaction, when introducing a customer centric remuneration approach.

H3: Tied agents, who identify themselves as high performer, estimate a positive change in bonus payments, when introducing a customer centric remuneration approach.

H4: Austria's tied agents have a higher acceptance of a customer centric remuneration approach than Hungary's tied agents.

This doctoral thesis has the objective to identify which underlying KPIs are used in the bonus schemes for agents after the implementation of the IDD into national law. It gives an overview of the current bonus landscape in insurance companies. The research examines the insurance agents' attitude toward a customer-centric remuneration approach. The outcome of this research work can help insurance companies in shaping bonus agreements for motivating high performers, which simultaneously reduce the conflict of interest and increase the customer satisfaction.

To confirm the hypothesis, 523 insurance agents from eight insurance companies, four located in Austria and four located in Hungary, were asked to participate in this online survey. The insurance agents filled out an online survey consisting of 17 questions. The survey is structured in questions regarding the agent, about the bonus scheme, the evaluation of the performance, and the assessment of a customer-centric bonus scheme. In the survey the agents were asked to evaluate a scenario, where the one and only underlying KPI to reach a bonus will be customer satisfaction. The entire bonus budget will be distributed among the agents solely based on the satisfaction of their customer. As an example, the classic 5-star rating (as known from hotel bookings, restaurant visits or Amazon products shopping) is introduced. After the customer centric scenario was presented to the agents, they are asked to estimate a potential change after implementing such an approach.

The next chapters on Theoretical Framework and Methodology outline the research work in detail, providing an extensive deep dive into the topic of conflict of interest in the context of insurance distribution. The last chapter on Conclusion and Discussion brings together the literature research with the empirical results, provides an overall conclusion and shares areas for further research.

II. THEORETICAL FRAMEWORK

The theoretical framework not only shows the state-of-the-art research but provides a profound analysis of existing concepts within the topic of insurance regulation, remuneration, incentivization and the conflict of interests in the insurance context. This literature review builds the foundation for the empirical study performed.

The first chapter offers a literature review by compiling findings and setting up profound arguments, why the regulation of insurance companies is necessary. It starts with showing the development of financial regulations and pointing out the differences of regulating banks and insurance companies. The main arguments for a strong prudential regulation are transparency, information asymmetry and agency problems, wrong incentives, a representation of the policyholder and the inversion of the production cycle. These findings make it necessary to regulate the companies and protect the policyholders.

The second chapter addresses the most recent insurance regulation directive applicable for the European Union (EU) member states. It gives a brief overview of the regulatory bodies, the content, the procedure, and the impact of the insurance regulation. This chapter addresses the national transposition of the directive in Austria and Hungary, analyzing the insurance markets where the empirical study is performed.

The third chapter focuses on the remuneration and incentivization approach for insurance intermediaries, starting with an overview of the insurance intermediary market. The various remuneration models are examined based on their ability to promote intermediaries' unethical behavior.

The fourth chapter picks up the generally known concept of principal agent theory and pairs it with the insurance distribution situation. The complex agency dilemma is analyzed in detail which gives a potential explanation for intermediaries' unethical behavior.

The four literature chapters analyze the conflict of interests within remuneration models in the insurance business and show the status quo of the European directive aiming in reducing this conflict. The theoretical framework identifies the research gap and prepares the empirical study.

1. Regulating the Insurance Market

In 2018, the Insurance Distribution Directive (IDD) was fully implemented by all EU member states. The directive intends to harmonize the insurance market, to provide the right incentives for agents and to protect the consumers. The question arises why a stricter regulation of the insurance sector is needed. Whenever the regulation of the financial market is discussed, mostly people consider the regulation of banks and not insurance companies. The core business of the banking sector makes it necessary for a prudential authority to intervene and monitor. But what about the insurance sector? The similarities between the banking and insurance market lead to the assumption of required limitations and monitoring.

Regulating the insurance market started with the foundation of the European Economic Community (EEC) in 1957. The initial idea was to strengthen the unity of the economies of the six founding countries (Belgium, France, Italy, Luxembourg, the Netherlands and West Germany) In the course of the 1970s and 1980s the community was addressing the weaknesses of the economic union and aiming at a European single market with a free-trade zone. In 1979 the European Community established the European Monetary System (EMS) and created the base for monetary stability (Hall, 2014, pp. 13–16). The success of the economic and monetary union emerged in the Treaty on the European Union, the Maastricht Treaty, in 1992 (Hall, 2014, p. 19). Since the first day of the EEC many directives were issued. They already targeted a more integrated financial market and a harmonized approach (Cummins, Rubio-Misas, & Vencappa, 2017, p. 67). The past 25 years the financial market has undergone a deregulation process through the European Union's Third Generation Insurance Directive which was implemented in 1994. Creating a single European insurance market with a better diversification and a strong competition should have a positive effect on the choice of the policyholders with a variety of insurance products (Cummins et al., 2017, p. 66). The latest changes began with the consideration of Solvency II in 2007. This risk-based economic regulatory approach was implemented by European insurers. It is consistent for all member states. It aims at reflecting the risk that companies face and sets up a profound supervisory system. Furthermore, it not only focuses on the protection on customers but also on the stability of the financial system, especially the insurance industry (Cummins et al., 2017, p. 67). A significant transformation of the supervision of financial institutions occurred during the financial crisis in 2007 and 2008 (Doff, 2008, pp. 196–198). From then on, the European commission is constantly working for a harmonization of the regulatory framework across the EU member countries. This implies

implementing standards to react to a rapidly changing market (Eling, Schmeiser, & Schmit, 2007, p. 18). Solvency II, similar to the European banking regulatory framework Basel II, focuses on new requirements for insurers, provides the right incentives and is a risk-based approach (Doff, 2016, p. 604). The Insurance Distribution Directive or RL 2016/97/EU is a directive issued by the Council of the European Union and was fully implemented by all EU member states in 2018. The directive was developed because of regulatory changes. It intends to strengthen the consumer protection and establishes a competitive and harmonized landscape of the insurance business in the European Union (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016a).

1.1. The difference of regulating Banks and Insurance Companies

The necessity for general financial regulation is well discussed in economic theory. In most of the literature, the focus lies in regulating banks rather than insurance companies. Many principles apply for financial institutions in general, but there are differences in the nature of the two businesses (Konstantinides, 2003). The insurance sector and the regulations of insurance companies have evolved dramatically over the last years. These changes imply a strong connection to the banking sector (Lorent, 2008, p. 2). Das, Davies, and Podpiera (2003) state that the insurance business is traditionally seen as a stable financial sector. The liquidity liabilities within the banking industry increases the risk of contagious runs. Traditionally insurance companies are not affected by those runs (Das et al., 2003, p. 3, 2003, p. 14). Another evidence of a stronger bond between banks and insurance companies are partnerships and bancassurance. For over 20 years now, banks and insurers sell each other's products to grow through synergy effects. This cross-selling strategy initiated the development of complex risk management products, which is a challenge for the regulator to understand and evaluate them (Das et al., 2003, pp. 11–12).

1.1.1. Products and Services

Insurance companies offer products which are similar to saving products offered from banks (Lorent, 2008, p. 2). In the last years insurance companies transformed and positioned themselves as major actors within the financial market. New financial innovations modified the portfolios and increased the complexity of financial products. The liquidity risk and the systemic risk became higher. Life insurance products extended and became more like banking products. The new options within these products raised the liquidity of the liabilities. Because

of these changes, there is now a clear difference to traditional insurance products, which reveals a new exposure (Lorent, 2008, pp. 24–25). Insurance companies generally have longer-term liabilities in comparison to banks (Das et al., 2003, p. 9). Implementing bank-type products is also a method of an insurance company to compete with other financial institutions on the market. These products bear higher risks and create more liquid liabilities in the financial statement. As a consequence, the insurance company needs to invest further in risky assets and is dependent on the economic growth of the market (Das et al., 2003, p. 3). In general, insurance companies have more liquid assets than banks, for example bonds, loans, real estate, and equities. Therefore, insurers have a lower liquidity risk. Looking at assets and liabilities, a distinction between non-life and life insurance companies must be made. Within the non-life sector, liabilities are short term. The claims that arise from non-life products are unpredictable in terms of occurrence and amount. The assets, which cover liabilities from a non-life item thus need to be of high liquidity. Therefore, non-life insurance companies hold more liquid assets than banks. Liabilities and assets within the life insurance sector are long-term oriented. The optimization of matching duration of assets and liabilities of their insurance products is a constant objective of the insurance company (Lorent, 2008, p. 8). Das et al. (2003) share this view in their research. The insurance industry changed and linked stronger to banks. This is especially supported through activities attributed to the banking business. The stated similarities between banks and insurance companies above tend to increase the vulnerability and endangers the financial stability of the insurance sector (Das et al., 2003, p. 3). This is seen as one argument for the need of a strong regulation of the insurance market.

Shetty and Basri (2018) emphasize the importance of service orientation within the banking and insurance sector. When buying a financial product, the costumer needs to rely on the advice and the provided information by the agent. This is true for financial products in general such as mortgages, private pensions, funds and insurance products (Shetty & Basri, 2018, p. 237). Joseph, Stone, and Anderson (2003) look at the customer evaluation of insurance services. They have noted that when the complexity of a financial product is high and the customer involvement is low, customers mostly turn to brand names and known companies with a high level of service orientation (Joseph et al., 2003, p. 82). As more customers become self-educated and use the dynamic technology changes in the past such as user-friendly web pages, the traditional customer-agent relationship decreases. The insurance company or the bank needs to focus on its service orientation, building a strong customer relationship and

providing a high competence in terms of giving advice within the agents. These findings are valid for both financial sectors - banks and insurance companies (Joseph et al., 2003, p. 83). The only difference in the service offer between the two sectors is the fact that insurance companies need to build a customer-friendly and transparent claims process.

1.1.2. Panics, Runs, Contagion and Crisis

The core business of a bank makes it illiquid and fragile by nature. This is the reason for bank runs. Banks are connected within the interbank market and finance each other. Systemic panics may occur within the banking sector and cause global economic crises. In contrast to banks which invest in bank loans and bank deposits, insurance companies are more liquid with their investment in tradable assets. The reinsurance market reduces the contagion effect and prevent panics (Plantin & Rochet, 2009, p. 2). Reinsurance plays an important role in stabilizing the volatility and absorbing peaks of claims from big natural catastrophes. Reinsurance acts like a capital supplier to the insurers. Therefore, a failure of large reinsurance companies could result in contagions and have a high potential to disrupt the financial system (Das et al., 2003, p. 16). On the contrary, the interbank market cannot dam the fragility and the contagion which occurs in the banking sector (Plantin & Rochet, 2009, p. 2). However, insurance companies are not completely immune to crises (Das et al., 2003, p. 14). Considering the changing core business of insurance companies and the fact that insurance products become more similar to banking products, the industry is exposed to liquidity risk (Lorent, 2008, pp. 24–25). Lorent (2008) states that a stronger connection between the financial market and insurance companies is a danger for the economy. The insurance industry could face an insurance run as well. The systemic financial stability becomes more important and Lorent (2008) calls for a stronger supervisory framework on financial risks within the insurance market. Most literature and empirical evidence on insurance regulations ignores the fact of possible insurance runs. Morrison (2002) says that a run is no typical phenomena and cannot take place within the insurance sector.

Another fundamental difference between banks and insurers, is the right of a policyholder to cancel in comparison to a depositor. Policyholders of insurance contracts often need to pay a compensation fee for possible withdrawal of the contract. The cancellation repayment of an insurance product is usually a longer period than for a bank deposit (Lorent, 2008, p. 8; Plantin & Rochet, 2009, pp. 92–93).

Furthermore, Lindgren, Garcia, and Saal (1998) differentiate between the possible scenario of panics and distress for a bank and for an insurance company. The big differences lay in the liquidity and the systemic risk. When a bank suffers from a financial distress the consequence is a liquidity problem. This happens because the liabilities of a bank are demandable deposits. As soon as the depositors think their deposits are unsafe, they will withdraw their money. This was initially the reason for the implementation of security nets of central banks. Detragiache and Demirgüc-Kunt (1997) argue that those systematic safety nets were responsible for the emerging financial crisis. They develop a safe haven and support the moral hazard behavior of bankers. Often control systems are governmental owned, so the intention of exploitation rises. Banks that should have been closed in the past were saved because of political reasons (Plantin & Rochet, 2009, pp. 90–91). Polonchek and Miller (1999) performed a detailed empirical study about the impact of the announcement of capital information for insurance companies. Announcing the emission of new capital is generally seen as bad news and has a negative impact within the banking sector. The stock price of other banks in the system is affected and contagion will occur if one bank suffers from distress. Polonchek and Miller (1999) did not find any evidence for this contagion effect within the insurance sector. Statistically the contagion effect for insurers can happen but is very small in comparison to banks. Das et al. (2003) support this statement but differentiate for insurance companies with traditional products. For those insurers, the contagion may be smaller. Depositors can withdraw their deposits immediately with small losses. If a bank might go bankrupt, depositors will take a higher future interest or a lower interest now to save their money. Cancelling an insurance contract goes hand in hand with considering higher costs for potential claims and replacing the policy. The cancellation repayment of an insurance policy generally takes more time than repaying the bank deposit. For policyholders of traditional insurance products it is not convenient to take their money out of the insurance company (Das et al., 2003, p. 15).

Only looking at the core business of a bank and an insurance company, there is no need for stronger regulations on the insurance market. The liquidity and the systemic risk in the banking system are drastic but within the insurance sector much lower. Dewatripont and Tirole (1999) suggest to focus on the claim holder. Their representation hypothesis state that the regulatory framework should act as a representative of the claim holder. Das et al. (2003) study big insurance failures in the past. They look at the factors that played an important role for the failures. The most important factor is the

financial deregulation that allows the insurance company to perform bank-type activities and offer bank-similar products. Another factor described is the close linkage between banks and insurers (Das et al., 2003, p. 18). Insurance companies failed because they invested in risky assets such as junk bonds to meet the high return on liabilities. As soon as a recession in the economy emerged those risky investments became a high burden for the insurance company (Das et al., 2003, p. 20).

1.2. Arguments for Regulation

The following section presents arguments, why the insurance industry needs to be regulated. Most of them would be missing in a free market and would result in negative consequences for shareholders, managers, and policyholders. The International Association of Insurance Supervisors defines the Insurance Core Principles, which state that a regulatory system is necessary for a save and fair insurance sector. The focus lies on the protection and the interests of the policyholders and the overall stability of the financial system (International Association of Insurance Supervisors, 2018, p. 4).

1.2.1. Transparency

Lorent (2008) emphasizes the necessity of transparency. In comparison to other sectors, the insurance sector is in general less transparent. A high disclosure about the risk management is becoming increasingly important. The rising complexity of insurance products and internal models for transferring risk demand a higher level of transparent information (Lorent, 2008, p. 25). Borio (2004) also highlights the importance of market discipline connected with increased transparency. Regulations alone are not solely successful for a strong and solvent insurance industry. A higher level of transparency creates a higher pressure on other insurance companies to provide their policyholders with appropriate products and services (Eling et al., 2007, p. 17).

1.2.2. Information Asymmetry and Agency Problems

The phenomena of moral hazard and adverse selection is found in insurance institutions. These concepts will be discussed in detail in a later chapter in more detail. A policyholder which has an insurance contract does not need to bear the full consequence of his or her behavior. For example, a policyholder of a motor contract can drive faster and more irresponsible. In case of an accident, the policyholder does not need to bear the costs of repairing the car. The motivation to reduce the risk for an accident decreases when the risk is transferred to the

insurance company. The insurance institution does not have any control on the behavior of the policyholders. Otherwise, the insurance company also need to cope with information asymmetries. The policyholder has more information on his or her own level of risk than the insurance company. People with higher risk profiles are more willing to conclude an insurance contract than people with lower risk profiles. Because of the missing information about who has a high and who has low risk profile, the insurance companies price their contracts at an average level. Low risk profiles fund the high risk profiles. Pricing the average risk profile works well, as long as low risk profiles will not decide to quit their contracts (Lorent, 2008, p. 5). Klein (1995) states in his public interest theory that regulations are necessary because of these imperfections in the insurance market. Regulators should prevent moral hazard and adverse selection and reduces the conflict of interest between the different parties of an insurance contract. Also, Butsic (1994) says that a regulatory framework is needed to resolve market imperfections (Butsic, 1994, p. 658). Plantin and Rochet (2009) believe that market imperfections are the reasons for insurance regulations. The objective of the regulatory framework is to simulate perfect market conditions to protect the policyholders and to compensate the existing agency problems (Plantin & Rochet, 2009, pp. 27–28).

1.2.3. Wrong Incentives

Plantin and Rochet (2009) say that agents do not have the right incentives to act correctly in the case of distress. Prudential supervision seems pointless when people, like shareholders and managers with control rights and the necessary information do not act correctly because of a wrong incentive system (Plantin & Rochet, 2009, p. 12). A case study showed that implementing the wrong incentives build unprofitable companies. Passive shareholders, short-term planning and hiring agents without a performance-based model support the downfall conditioned by wrong incentives (Plantin & Rochet, 2009, p. 14). In a later chapter the correlation of unethical behavior and incentives is explored in more detail.

1.2.4. Representative of policyholders

The IAIS state that the fundamental objective of supervision is the protection of the policyholder (International Association of Insurance Supervisors, 2018, p. 17). Policyholders do not know how their paid premiums are used. Policyholders are as well not capable of evaluating the financial stability of the insurance company (Dewatripont & Tirole, 1999). This

is because insurance companies are too complex for policyholders to understand the processes behind (Plantin & Rochet, 2009, pp. 27–28). Consumers are generally not interested in the profits of the firm. They just want the insurance company to pay their claims at the right moment. They want to be sure that the insurance company is capable of paying the claims during the lifetime of the product. Regulations should guarantee that the insurance company meets its obligations and protects the policyholder (OECD, 1998). Policyholders are not able to protect themselves against the insolvency of insurance companies by holding a diversified portfolio with more insurance companies to compensate a collapse (Cummins, 2002). Generally, policyholders rely on one insurance company for every insurance contract (Lorent, 2008, pp. 5–6). Policyholders cannot use their control rights in practice. Therefore, a regulatory framework within the prudential authority needs to support the policyholders. This should be the representative of the policyholders and their claims in the governmental structure. During the time of distress, the regulator should function as a proxy and play the role of a claim holder, in order to protect their interests (Plantin & Rochet, 2009, p. 63). Another reason for prudential regulations is that claim holders will always demand the payment of their claims. This is independent of the financial situation of the insurance company and wherever the company fears an insolvency. If a claim holder is willing to cut his or her losses in time of distress, the liquidity problems could be dammed easily (Plantin & Rochet, 2009, pp. 27–28).

1.2.5. Inversion of the production cycle

One reason why insurance companies face agency problems is the inversion of the production cycle in the insurance industry. The distinctiveness of the insurance industry in comparison to other goods and services is that the insurance service is required a long time after the product is purchased. Typically, premiums are paid by the policyholders when the contract is signed and permanently during the lifetime of the product. The compensation is paid by the insurer in case of an existing claim. This may happen after several years or probably never (Plantin & Rochet, 2009, pp. 43–44). In case of a claim the insurer intermediates the risk directly. They use tools like diversification and risk pooling to manage the risk (International Association of Insurance Supervisors, 2018, p. 4). The process of paying premiums in advance is applied because the premiums cannot be collected afterwards, especially not for policyholders who did not experience a claim or a loss. The actual production costs of insurance products can only be defined a long time after the contracts have been underwritten

and the corresponding premiums are paid (Plantin & Rochet, 2009, pp. 43–44). Another feature of the inverse production cycle of the insurance industry is that the insurers can alter the risk profile during the existing contract. Policyholders could experience changes in their policies due to changes of the company, without the possibility to intervene for the policyholders (Plantin & Rochet, 2009, pp. 53–54). Moreover, the inversion of the production cycle motivates managers to compensate difficulties by taking riskier policies with higher premiums. Losses do not automatically result in insolvency. Managers can react and take higher risks compensating imminent losses (Plantin & Rochet, 2009, pp. 27–28). The inversion of the production cycle creates dangerous agency problems. These can be mitigated by introducing a regulatory framework and capital requirements for insurance companies (Plantin & Rochet, 2009, pp. 53–54).

A regulatory structure matters when the system suffers from agency problems and information asymmetries. The inverted production cycle and the time difference between purchasing a contract and getting the output in the insurance sector are the reasons for the existence of these problems. Therefore, insurance companies need to be highly capitalized and exhibit a high liquidity. Unfortunately, this is not enough. Shareholders, managers, and policyholders do not have the right incentives to make the right decisions when the company is in distress. Therefore, an external regulatory framework needs to be introduced (Plantin & Rochet, 2009, pp. 53–54). The main reasons presented above strengthen the necessity of prudential regulations. Plantin and Rochet (2009) emphasize that introducing a strong regulatory authority does not imply the elimination of failures. In general, failures are important in the economy to identify and distinguish between efficient and inefficient firms. Moreover, reducing failures is a necessary objective for managers, which most of the time is not contained in their incentive model. When the consequence of a failure happens, usually this is expensive and has a negative impact on the employees and policyholders. Therefore, it is relevant to set up a model that reduces failures but does not eliminate them completely. Without any failures, insurers would stop taking risks and start abandoning their core business. The solvency requirements would be huge and therefore financial services within the insurance market would be extremely costly. Regulations should supervise and intervene when insurance companies need to be restructured, but do not eliminate the free market and therefore the possibility for insurance companies to fail (Plantin & Rochet, 2009, pp. 57–58). Gaganis and Pasiouras (2013) point out the power of a unified supervisory structure for the financial market. This structure creates synergies and

is more efficient when it comes to functions and expertise. Additionally, it prevents regulatory gaps and duplicated control functions. A unified system sets clear responsibilities and increases the commitment of the supervisor (Gaganis & Pasiouras, 2013, p. 5464)

There are situations in the insurance industry where regulating is not needed because the parties do not face agency problems. This is the case when a large and experienced broker makes a contract with an insurance company on behalf of his or her policyholder. When no regulations are present, the broker would not enter a contract with an insurance company which credit rating is low. One option would be to reduce the premium for the policyholder to compensate the higher default risk of the insurer. Because the broker represents the policyholder and acts in his or her name, the broker would not do business with a company being poorly capitalized. In summary, when the policyholder is represented by a broker, the decision to enter a contract or not in a free market are like a regulatory based system. Generally, prudential authorities differ from brokers in many points. A regulator checks the capital adequacy of the insurer and makes important reorganization or liquidation decisions (Plantin & Rochet, 2009, p. 58).

The first chapter presented the reasons why a strong regulation of the insurance market is necessary. By the end of 2018, the IDD was fully implemented by all EU member states. The main reasons presented in this chapter are covered in the IDD. Those are transparency, information asymmetry, agency problems, incentives, representing the policyholder and the inversion of the production cycle. The following chapter analyzes the IDD in more detail and investigates how this directive can reduce the conflict of interests within the insurance sector.

2. The Insurance Distribution Directive (IDD)

The Insurance Distribution Directive, also known as the EU Directive 2016/97 is a minimum harmonizing directive that regulates the distribution of insurance products by all insurance distributors (European Insurance and Occupational Pensions Authority, 2019; Financial Conduct Authority, 2016, Financial Conduct Authority, 2018). The IDD replaces the Insurance Mediation Directive (IMD), also known as 2002/92/EC, which was published in 2002. Like the IMD, the IDD covers the regulatory requirements for insurance and reinsurance companies and aims for a stricter

consumer protection and supports competition between insurance distributors. However, the IDD focus on new areas of regulation and includes products design and governance (Financial Conduct Authority, 2016). European Union member states had until February 23rd, 2018 to implement the changes into national law. Insurance companies need to comply with the rules until October 1st, 2018. The IDD is designed to protect the customer, which is in line with the MiFID (Markets in Financial Instruments Directive) II, also known as the 2014/65/EU and the PRIIPs (Packaged Retail and Insurance-based Investment Products), which are covered in the EU Regulation No 1286/2014. The IDD has a broader scope than the IMD, which focuses on the entire distribution chain (Veris & Goddet, 2018, p. 33); European Commission, 2020).

The IDD is seen as a significant milestone in strengthening consumer protection in the insurance sector. Taking the consumer interest into account is of high importance throughout the end-to-end insurance life cycle. Insurance companies need to undergo a culture change where putting the consumer interest in the center. Companies that manage to prioritize the customer interest and follow the regulation will strengthen the trust of their customers and gain a competitive advantage. To guarantee implementing the IDD, a strong set of sanctions is included. The consequences could be a temporary ban for managers within insurance undertakings, fines, lawsuits and consequently a negative impact on reputation (Veris & Goddet, 2018, p. 4).

The rules of the IDD apply to all distributors of insurance products. The European Commission, 2020 defines insurance distribution as the selling, proposing to sell and the advice on the conclusion of an insurance contract (European Commission, 2020). The traditional distribution channels are insurance intermediaries, such as agents and brokers. Generally, intermediaries must be registered and meet certain minimum requirements. Furthermore, the IDD applies to insurance companies that sell directly to customers and also to ancillary insurance intermediaries which offer insurance products as an add-on product and service, such as travel agencies or banks (European Commission, 2020). The IDD covers not only the classic distribution channels like agents and brokers but also direct online sales, websites, and sales activities via aggregators. Aggregators are websites where the customer can compare different products and directly buy via the website. Moreover, affinity business is also covered in the IDD. These are companies which sell insurance products as a service and have a different core business, such as car rentals, leasing companies, airlines, etc. The directive aims at harmonizing the EU member states and therefore allow countries to introduce more stringent rules which comply with the IDD (Veris & Goddet, 2018, p. 2).

2.1. Regulatory Bodies

The Directive 2016/97 was issued by the Council of the European Union. The IDD is based on the Treaty of the Functioning of the European Union (TFEU) and should be adjusted of the local market and legal system in each EU member state. The former Directive 2002/92/EC showed limitations undertaking insurance distribution. The 2016/97 Directive offers a broader scope and needs to be seen in combination with the Directive 2014/65/EU, which covers the regulation of investment products. The required harmonization across the EU is achieved by setting up technical standards. The European Insurance and Occupational Pensions Authority (EIOPA) is tasked to develop and implement the technical standards which are submitted to the European Parliament, the Council, and the Commission. Five years after the law was enforced a review of the Directive will be published. This review should take market developments and local experiences implementing the EU law into account (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b). The IDD enables the European Commission to make secondary legislation, which contains delegated acts and the implementation of technical standards (Financial Conduct Authority, 2018). The IDD furthermore empowers the EIOPA to develop supporting guidelines (Financial Conduct Authority, 2018). The EIOPA submitted advice to the European Commission on February 1st, 2017 already containing detailed requirements for the conduct of business. The European Commission adopted two delegated regulations. The first covers the product oversight and the governance requirements for the insurance distributors. The second covers the information requirements and rules applied to the distribution of insurance-based investment products (IBIPs). On February 7th, 2017 EIOPA submitted a technical implementation standard draft including a template for the Insurance Product Information Document (IPID) with a customer testing exercise. The commission followed this draft and published a standardized presentation format for the IPID in all official languages of the European Union. EIOPA issued guidelines in October 2017 to make the risks of IBIPs easier to understand for customers, including Key Information Document (KID) for every IBIP. Those guidelines come together with a Q&A (European Insurance and Occupational Pensions Authority, 2019).

2.2. Contents

The IDD sets requirements for selling insurance products in general, which cover general insurance, life insurance and IBIPs (Financial Conduct Authority, 2018). More focus is laid on the products that have an investment element, such as unit-linked life insurance products (European Insurance and Occupational Pensions Authority, 2019).

Moreover, the IDD aims at consumer protection and therefore focuses on the following main areas of regulation:

- A **needs analysis** must be performed with the customer. The collected data allow personalized advice based on the customer's need and demands. This analysis is necessary to sell the best suitable insurance product to the customer.
- Knowing your customer, his or her financial situation and investment objectives is a basic requirement in the distribution process. A **suitability and appropriateness assessment** must be performed to advise the right product.
- The customer needs to receive the **product oversight and governance**. All information having an impact on the advised product and the product value chain should be shared with the customer (Veris & Goddet, 2018, p. 34). The IDD regulates insurance companies to give their consumers a greater transparency of the price and the costs of insurance products. Furthermore, insurance companies and intermediaries need to provide the customer with a simple and standardized IPID to support the customer with an informed decision to buy a certain product. The IDD makes it compulsory to give the customer the choice to buy a product, e.g., a new car, without a packed insurance service, e.g., motor insurance. The rules on transparency and business conduct covered in the IDD support customers buying insurance products that meet their demands and needs (European Commission, 2020).
- The IDD covers strict conduct of business and **transparency** rules. It lays down the required information to the customers before signing an insurance contract, clarifies rules for cross-border business and includes rules for supervising and sanctioning insurance distributors (European Insurance and Occupational Pensions Authority, 2019). The customer receives basic **product information**. On the one hand, the IPID which is a standardized document containing the main features of a non-life contract. On the other hand, the customer receives the PRIIPs for product details of investment products (Veris & Goddet, 2018, p. 34).
- The IDD addresses the **professional requirements**, which identifies if the person directly involved in the distribution process is fit, proper and trained. The required training workload should at least add up to 15 hours IDD training per year.

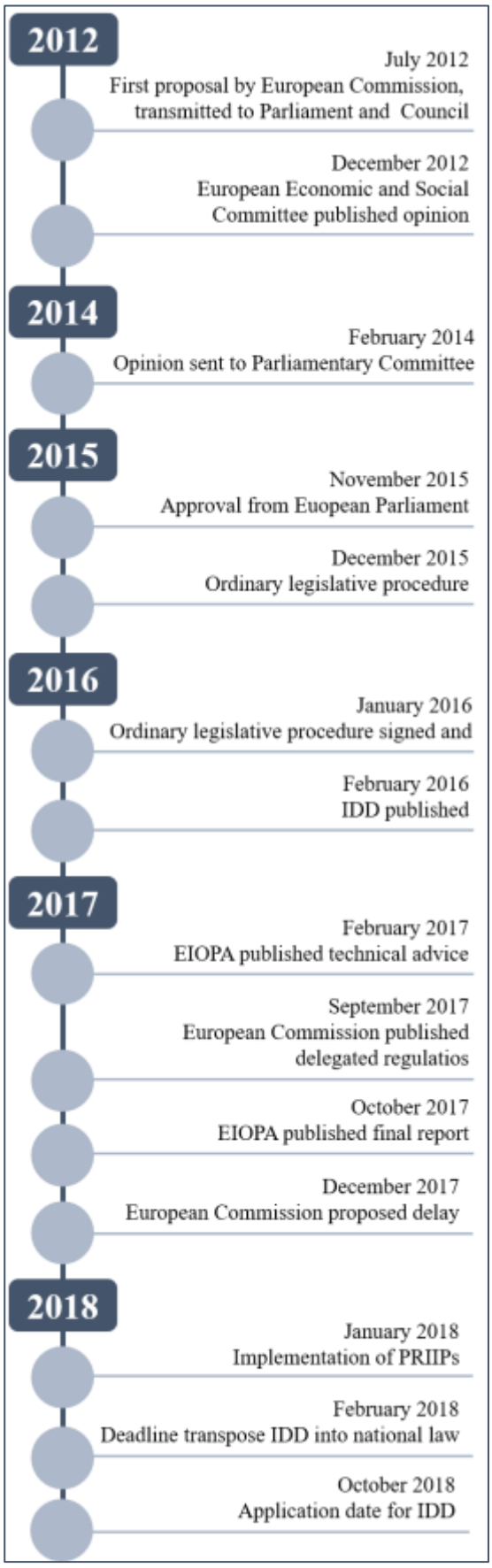
- The directive covers the topic of **inducements**. Remunerating the insurance distributors should not in any way reduce the quality of servicing the customer. Customers need to receive information breaking down the received remuneration for this contract. This topic will be addressed in more details within the next chapters.
- Another major provision is the **conflict of interests**. Insurance intermediaries should act with the best interest of their customers. Internal agreements need to assure this (Veris & Goddet, 2018, p. 3). The conflict of interest will be discussed in more detail in the next chapters.

2.3. Procedure

The IDD was published in January 2016 (Veris & Goddet, 2018, p. 35), but the foundation was already laid years before, which is shown in the figure below. In July 2012, the European Commission handed in the first proposal for a directive. One day later the proposal was transmitted to Parliament and to Council and two weeks later the corrigendum came back. In December 2012, the European Economic and Social Committee published the opinion on the proposal for the directive of the European Parliament and of the Council on Insurance Mediation in the Official Journal of the European Union. In February 2014, the European Parliament documented the opinion based on the first ready and decided to send to parliamentary committee. In November 2014 and September 2015, the Council of the European Union discussed with its preparatory bodies. On year later, in November 2015 the European Parliament approved with amendments, which was followed by further discussions in November and December 2015. On December 14th, 2015, the Council of the European Parliament approved resulting in an ordinary legislative procedure (COD). On January 20th, 2016, the President of the European Parliament and the President of the Council of the European Union signed the COD. The IDD was published in the Official Journal of the European Union on February 2nd, 2016 (EUR-Lex, 2020b). In February 2017, the EIOPA submitted the final document for technical advice for the European Commission. This advice further specifies product governance, conflict of interest, inducements and the suitability and appropriateness assessment. The consultation happened in July 2017. On month later, in August 2017 the European Commission published the IPIDs. In September 2017, the European Commission published two delegated regulations. One for product oversight and governance and the other for information requirements and conduct of business rules for IBIPs. In October 2017 EIOPA published the final report containing the guidelines for IBIPs (Veris & Goddet, 2018, p. 4). 2018 was a challenging year for the European insurance sector. The initial application date for the IDD was February 2018. In December 2017, the European Commission

proposed the delay of the implementation to October 2018. This proposal needed to be discussed with the Council of the European Union and the European Parliament. The proposal emphasized the delay based on the short timeframe for preparing the implementation of the IDD. Implementing those regulatory changes is about technical and organizational adjustments which comply with the directive (Veris & Goddet, 2018, p. 2). Veris and Goddet (2018) analyzed the required changes for insurers to meet the postponed implementation date. They come to the conclusion that the IDD has a significant impact on the operational business and the strategy of insurance companies and intermediaries. A highly structured implementation approach is needed to meet the delayed deadline in October 2018 (Veris & Goddet, 2018, p. 2).

Figure 1: IDD Timeline



(Source: Veris & Goddet, 2018, p. 4)

2.4. Impact

The delay of the implementation date for the IDD was initially proposed because the changes for the local insurance companies were higher than initially expected. It has turned out that the IDD has an impact on many areas within insurance companies:

Business Strategy: The IDD focuses on the customers' interests. Therefore, insurance companies need to rethink and transform their distribution and charging strategies. The product governance pushed companies to align their strategy with their target market with the demands and needs of the client in the center.

Processes & IT systems: The IDD presents various processes that require significant changes in the IT systems. For example, changes are required within the sales process, as customers must perform an appropriateness and suitability assessment. Furthermore, the disclosure and record-keeping follow stricter rules. Also, insurance comparison websites need to adapt technically to the new rules.

Organization & People: The highlighted professionalism required a higher standard of trainings, development, and performance management within the company. The overall target is to increase the knowledge and upskill the people that are client-facing. The ongoing learning is required to keep up with any subsequent changes for products or processes (Veris & Goddet, 2018, p. 9).

The IDD not only affects the business strategy but also the number of intermediaries in the insurance market. Already with the implementation of the IMD a significant decrease of the number of registered intermediaries has been observed in Germany. Back then, registration requirements were implemented, which a lot of inactive agents did not fulfill. Now, with the implementation of the IDD the compliance costs for each self-employed intermediary are increased substantially. Especially many small intermediaries with no professional business model are affected. In Germany there has already been seen a big decrease in the number of registered tied agents, which is lead back to the necessary yearly training requirements. Often, the small amount of business an agent generates does not justify the training effort and cost (European Insurance and Occupational Pensions Authority, 2018, p. 7). The number of agents is higher than the number of brokers in Europe, however the number of agents is decreasing in the last few years. This is because brokers are able to offer more sophisticated advice to their customers. Additionally, brokers can decide autonomously on their distribution methods, like online mediation and are generally not restricted to local markets. On the other hand, smaller brokers can also suffer from the bureaucracy and regulatory compliance the IDD brings. For tied agents, the insurance company needs to implement costly changes and therefore

support the agents heavily. Furthermore, the IDD will impact on part-time intermediaries. Those are no longer able to meet the increased professional requirements. Smaller intermediaries, with a small or no back office, will suffer from the high standards for documentation-related requirements and stricter compliance. Customers will increasingly research or buy online. This trend requires intermediaries to be more flexible and develop themselves into hybrid mediators, offering products and servicing online and offline (European Insurance and Occupational Pensions Authority, 2018, p. 8).

The implementation of the IDD will furthermore have a big impact on the remuneration of intermediaries. Even within the IMD, there has been no single harmonized model to cope with the conflict of interests. The existing remuneration approaches were a result of various national regulations of all member states. The IDD does not target for a specific remuneration model, but it sets rules for ensuring the transparency to the customer. It allows member states to keep their existing remuneration system. This means, that customers can pay a fee for the advising service of an intermediary or a commission within the paid premium, it just needs to be transparently revealed to the customer when signing the contract. The IDD furthermore requires that the distribution of insurance products and the underlying remuneration system need to remain free of conflict of interests and to be served in the best interest of the customer. Detailed technical rules are presented by the European Commission (European Insurance and Occupational Pensions Authority, 2018, p. 35).

2.5. National Transposition

February 23rd, 2018 is the deadlines for the European Union member states to become IDD compliant. The respective local authorities were not adopting the same approach and speed of finalizing the national transposition. Six months before the deadline the discrepancy across Europe regarding the finalization was big. The insurance industries in the various member states implemented the set of IDD requirements in a diverse speed. Some countries, as Germany and Italy for example, moved ahead, building up large implementation programs. Their strategy was to analyze the gaps in the existing local regulation, identify the business impact and plan the required actions to make this transition happen. Other countries, like the Czech Republic, at the same time, just started with the preparatory work (Veris & Goddet, 2018, p. 34). The transposition of the EU law into national law of every member state is documented by the publications office of the European Union (EUR-Lex, 2020a).

The IDD leaves the member state a lot of flexibility translating the requirements into national law. It is permitted to impose stricter rules and requirements in certain areas (Veris & Goddet, 2018, p. 37). These national rules with additional requirements and stricter implementations are called general good provisions and are collected by the EIOPA for all member states (European Insurance and Occupational Pensions Authority, 2020).

As already mentioned in the introduction, the empirical study of this work focuses on insurance intermediaries in Austria and Hungary. Therefore, the following subchapters give a brief overview of the respective national insurance market and the local process of implementing the IDD.

2.5.1. Austria

The publication office of the European Union publishes the transposition measures communicated by the member states. Austria took advantage of the postponed transposition date in July 2018. Two national legislative texts are published on the national websites (EUR-Lex, 2020a).

The supervision of Austria's insurance intermediaries is split between the Federal Ministry of Digital and Economic Affairs and the Financial Market Authority (FMA). The main responsibility of both authorities is to check the applications of intermediaries, specifically checking the required qualifications and the absence of criminal record or previous bankruptcy. In addition to this, another responsibility is the onsite and offsite supervision, issuing sanctions and even withdrawing the permission to perform insurance distribution activities in drastic cases. The Austrian authorities can receive complaints and initiate investigations if there are suspicions. Trade Authorities have to perform regular inspections including checking the transposition of the IDD (European Insurance and Occupational Pensions Authority, 2018, p. 2). The Austrian Economic Chambers is the voice of the business and represent more than 517.000 Austrian member companies. It publishes various templates and guidelines to implement the IDD requirements consistently (Wirtschaftskammer Österreich, 2020).

Austria introduced general good provisions regarding intermediaries through their federal ministry of digital and economic affairs (European Insurance and Occupational Pensions Authority, 2020). The Financial Market Authority provides information on the extent to which

Austria has chosen to apply stricter provisions. The Austrian Authorities decided to apply even stricter rules when it comes to communication, transparency and approval with the customer (Federal Ministry Republic of Austria Digital and Economic Affairs, 2020). Furthermore, the federal law emphasizes rules for the remuneration of intermediaries. It is stated that the compensation of an intermediary should not in any way collide with the interest of the customer. Insurance companies are not allowed to incentivize intermediaries through commissions, sales targets or any other way to advise the customer for a specific product, when another product would fit the customer's needs better (Rechtsinformationssystem des Bundes, 2018).

The European Insurance and Occupational Pensions Authority published a country-by-country analysis in annex IV with data describing the insurance market (European Insurance and Occupational Pensions Authority, 2018).

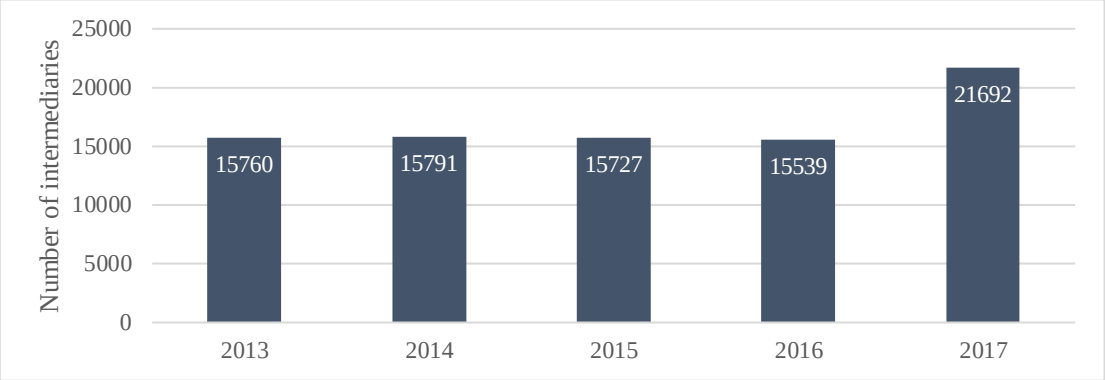
Table 1: General Market Data Austria 2016

General data of the national market	Amounts	Share of total EEA
Population	8.773.000	1,70%
Insurance GWP	€ 16.981.491.483,16	1,37%
Number of (re)insurance companies	38	1,22%
Number of insurance intermediaries	15.539	1,52%

(Source: European Insurance and Occupational Pensions Authority, 2018)

In 2017 Austria had 21.692 registered intermediaries, which are 6.153 more than in 2016. Of those registered intermediaries in 2017 76% were legal persons and 24% natural persons.

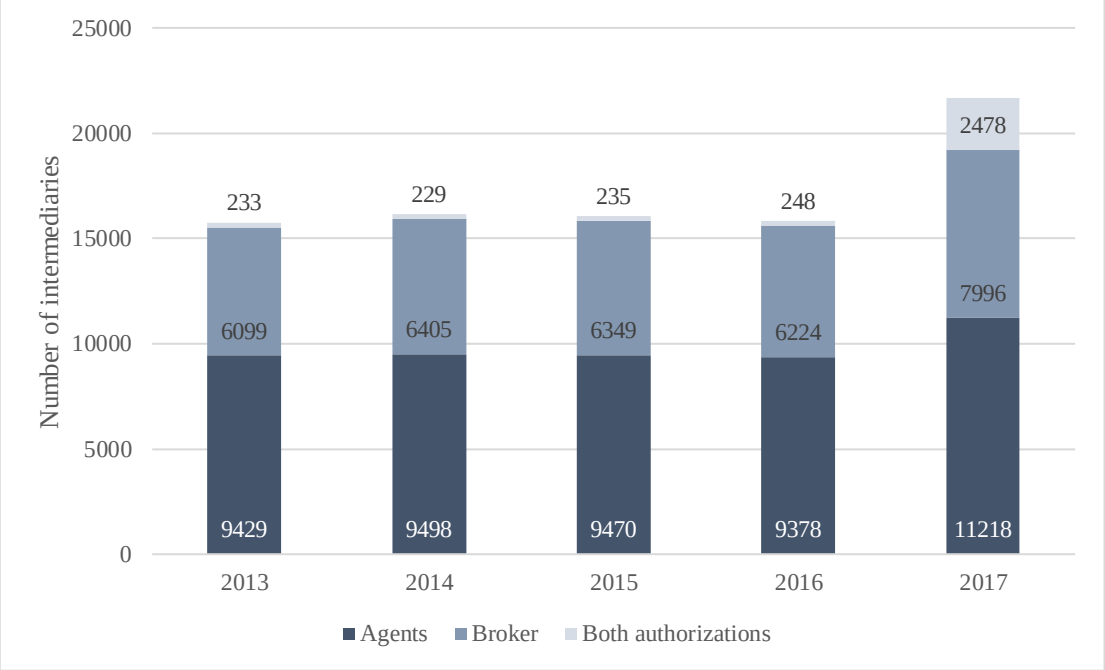
Figure 2: Registered intermediaries in Austria



(Source: European Insurance and Occupational Pensions Authority, 2018, p. 3)

In 2017, the registered intermediaries split in 37% brokers, 52% agents and the remaining 11% with both authorizations.

Figure 3: Registered intermediaries in Austria split by category



(Source: European Insurance and Occupational Pensions Authority, 2018, p. 3)

2.5.2. Hungary

The publication office of the European Union publishes the transposition measures communicated by the member states. Hungary already delivered for the initial transposition date in February 2018 five legislative texts. For the postponed date in July 2018 Hungary published again five updated legal texts on their national websites (EUR-Lex, 2020a).

Hungary introduced general good provisions regarding insurance undertaking and intermediaries through the Magyar Nemezeti Bank (MNB) (European Insurance and Occupational Pensions Authority, 2020).

The European Insurance and Occupational Pensions Authority published a country-by-country analysis in annex IV providing local market data about the insurance sector (European Insurance and Occupational Pensions Authority, 2018).

Table 2: General Market Data Hungary 2016

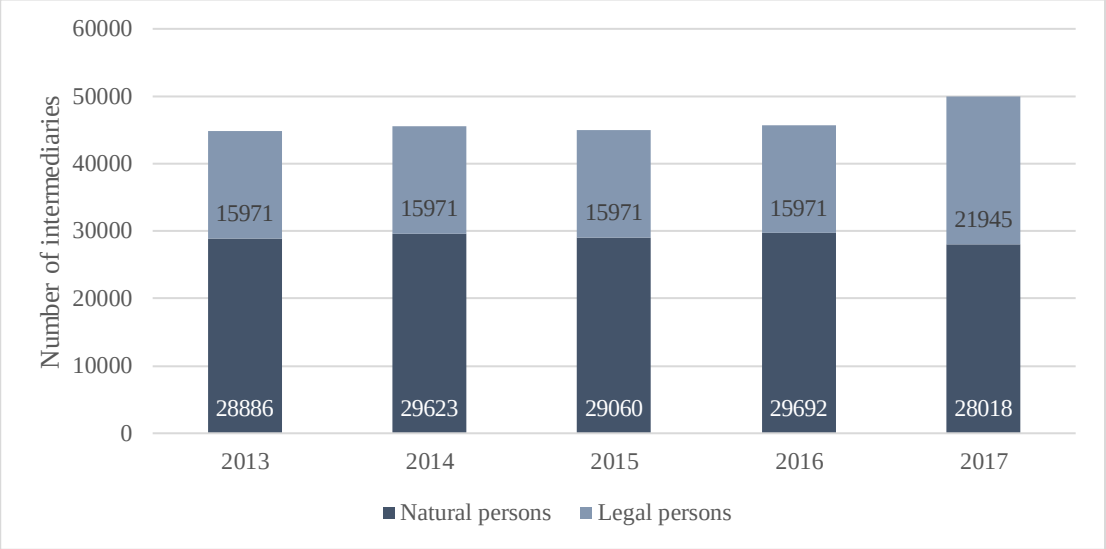
General data of the national market	Amounts	Share of total EEA
Population	9.798.000	1,89%
Insurance GWP	€ 2.825.945.163,92	0,23%
Number of (re)insurance companies	27	0,87%
Number of insurance intermediaries	45.663	4,47%

(Source: European Insurance and Occupational Pensions Authority, 2018)

Hungary's total GWP passed the HUF 1.000 billion (EUR 3.19 billion) threshold in 2018 (XPRIMM, 2019, p. 40).

The number of registered intermediaries in Hungary has increased to 49.963 in 2017, with 56% being natural persons and 44% being legal persons.

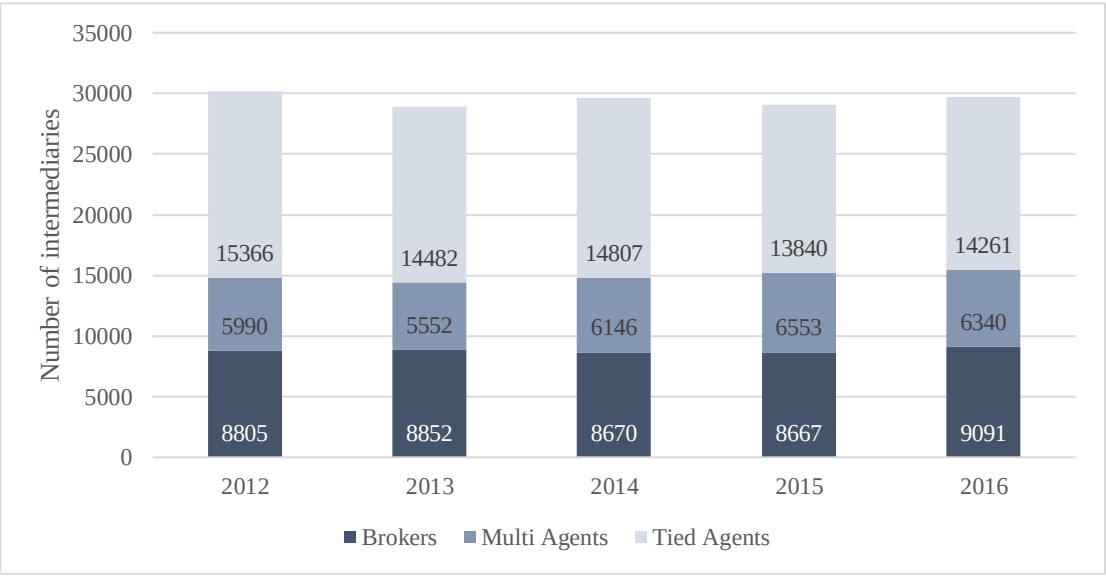
Figure 4: Registered intermediaries in Hungary split by natural and legal persons



(Source: European Insurance and Occupational Pensions Authority, 2018)

There are three types of insurance intermediaries in Hungary: Multi Agents, Tied Agents and Brokers. From the natural persons, 31% have a broker license, 21% are multi agents and the remaining 48% represent tied agents. The online business has been increasing. Hungary has many online price aggregators, which operate as brokers. More than 50% of the life business is concluded via the bancassurance channel and more than 40% by agents (European Insurance and Occupational Pensions Authority, 2018, p. 35).

Figure 5: Registered intermediaries (natural persons) in Hungary split by category



(Source: European Insurance and Occupational Pensions Authority, 2018, p. 35)

The IDD covers a broad area of topics but especially laying the foundation of a true customer centric insurance distribution approach. Regulating inducements and preventing conflict of interest is the main aim of the IDD. The next chapter focuses on these inducements for insurance intermediaries analyzing the insurance market and the various remuneration models.

3. Remuneration and Incentives for Insurance Intermediaries

Before going into detail about the role of intermediaries and their remuneration systems, the connection to the IDD is demonstrated in Chapter 3. As already covered in Chapter 2., the IDD addresses the topic of Inducements. Remunerating and incentivizing the insurance distributors should not in any way reduce the quality of servicing the customer. This is addressed in many passages throughout the directive.

In section 46 of the IDD it is said that *"Member States should require that remuneration policies of insurance distributors in relation to their employees or representatives do not impair their ability to act in accordance with the best interests of customers or prevent them from making a suitable recommendation or presenting information in a form that is fair, clear and not misleading. Remuneration based on sales targets should not provide an incentive to recommend a particular product to the customer (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b)."* This puts the member states in responsibility of introducing a remuneration model that is fully aligned with the interests of the customer. Incentives are not allowed to motivate to sell any specific product, but only products demanded by the customer.

Section 57 specifies even more that the conflict of interest potentially lying in any kind of compensation needs to be prevented. *"In order to ensure that any fee or commission or any non-monetary benefit in connection with the distribution of an insurance-based investment product paid to or paid by any party, except the customer or a person on behalf of the customer, does not have a detrimental impact on the quality of the relevant service to the customer, the insurance distributor should put in place appropriate and proportionate arrangements in order to avoid such detrimental impact. To that end, the insurance distributor should develop, adopt and regularly review policies and procedures relating to conflicts of interest with the aim of avoiding any detrimental impact on*

the quality of the relevant service to the customer and of ensuring that the customer is adequately informed about fees, commissions or benefits (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b)."

The general principles in Article 17 state the core guidelines of the IDD. Insurance distributors should always act honestly, fairly, and professionally aligned with the best interests of the customer. *"Member States shall ensure that insurance distributors are not remunerated or do not remunerate or assess the performance of their employees in a way that conflicts with their duty to act in accordance with the best interests of their customers. In particular, an insurance distributor shall not make any arrangement by way of remuneration, sales targets or otherwise that could provide an incentive to itself or its employees to recommend a particular insurance product to a customer when the insurance distributor could offer a different insurance product which would better meet the customer's needs (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b)."* This section clearly brings the intermediaries' remuneration system in connection with the conflict of interests.

Article 27 and 28 even goes into more detail and cover the topic of conflict of interests. *"[…] an insurance intermediary or an insurance undertaking carrying on the distribution of insurance-based investment products shall maintain and operate effective organizational and administrative arrangements with a view to taking all reasonable steps designed to prevent conflicts of interest […] from adversely affecting the interests of its customers. Those arrangements shall be proportionate to the activities performed, the insurance products sold and the type of the distributor (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b)."* Furthermore, these sections state that all insurance companies and insurance intermediaries ensure that all necessary steps are taken to identify conflict of interests. These conflicts can not only exist for intermediaries but also between managers, employees and any person directly or indirectly linked to insurance distribution activities (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b).

The IDD addresses the potential conflict that a traditional remuneration approach might bring. Before analyzing the remuneration models in detail and investigating the unethical behavior based on the intermediaries' compensation, understanding the intermediary market is key.

3.1. Intermediary Market

Insurance companies all over the world vary along many dimensions, especially when it comes to distribution systems. There is a huge spectrum from the use of professional sales agents, employed sales force, independent sales representatives, or direct response methods such as mail, telephone, or internet. The competitiveness and technological development of the insurance market has resulted in greater segmentation and the use of multiple distribution systems (Regan & Tennyson, 2000, p. 709).

The European insurance intermediary market is composed of widely different local distribution channels and definitions adopted in national law. Different registration processes and reporting framework exist within the member states. The European Insurance and Occupational Pensions Authority performed an analysis which showed that the member states have a significant variation of the size of the intermediary market, which is referred to as the total number of registered intermediaries in the market. Moreover, the intermediary categories and the reporting system are different across the countries, making it difficult to draw conclusions for all European member states jointly (European Insurance and Occupational Pensions Authority, 2018, p. 5). The lack of common definitions regarding the types of intermediaries operating in Europe raise demand for a detailed picture of the European insurance intermediary market (European Insurance and Occupational Pensions Authority, 2018, p. 6). The local definitions of distribution channels are generally derived country specific. This fact make it challenging for EIOPA to provide a general overview of the distribution channels in Europe (European Insurance and Occupational Pensions Authority, 2018, p. 9).

One explanation for this unharmonized picture, is that the former EU legislation allowed flexibility to define categories of distribution channels on national level. Insurance intermediaries are traditionally categorized in Agents and Brokers, but a lot more types exist. Some member states have specific categories for insurance intermediaries (European Insurance and Occupational Pensions Authority, 2018, p. 11).

The insurance intermediary market is seen as competitive, but the competition is more based on the quality than on the price of a product and service. In such an environment, intermediaries compete with each other to add value for their customers. In order to win customers, intermediaries need to prove the delivered value (Cummins & Doherty, 2006, p. 384).

3.1.1. Types of intermediaries

An intermediary is seen as an individual or company standing between the buyer and the seller with some degree of independency from the insurer. The degree of independency of the intermediary varies between types (Cummins & Doherty, 2006, p. 360).

Insurance agents are intermediaries that act on behalf of insurance undertakings. Agents represent the insurance company within the insurance process and generally have an agency contract with the insurance company (European Insurance and Occupational Pensions Authority, 2018, p. 11). European Insurance and Occupational Pensions Authority (2018) sum up all different variations to the category of insurance agents, whereas Regan and Tennyson (2000) identify three different categories.

- **Employed single-tied agent** are dedicated sales representatives employed by one insurer directly (Regan & Tennyson, 2000, p. 712). Those agents operate exclusively with one insurance company and are called employed single-tied agents (European Insurance and Occupational Pensions Authority, 2018, p. 11).
- **Non-employed single-tied agents** are self-employed and independent of the insurer. Typically, they are small businesses or franchises with a contractual relationship to their insurer. The sales agents sell exclusively for their insurer (Regan & Tennyson, 2000, p. 712).
- **Multi-tied agents** exist in some markets. They work with multiple insurance companies, usually with a few insurers (European Insurance and Occupational Pensions Authority, 2018, p. 11). These agents have a non-exclusive sales relationship and are independent businesses with contractual agreements to sell the products of more than one insurer (Regan & Tennyson, 2000, p. 712).

The **managing general agents** primarily do insurance underwriting services and mostly function as a distribution channel for specialized product or niche products. The managing general agent mostly sells to other intermediaries who sell the product to customers (European Insurance and Occupational Pensions Authority, 2018, p. 12).

Insurance brokers are independent businesses and act as an "agent" of the customer. They help in assessing the needs and presenting the right insurance alternatives. Brokers work with multiple insurance companies to be able to place coverage for their customers and sell products of more than one insurance company (European Insurance and Occupational Pensions Authority, 2018, p. 12; Regan & Tennyson, 2000, p. 712).

Contrary to agents, brokers do not have a direct contractual relationship with one insurance company (European Insurance and Occupational Pensions Authority, 2018, p. 12). The broker represents the customer and not the insurer. In practice however, the multiple representation of products from different insurance companies make multi agents and broker very similar (Regan & Tennyson, 2000, p. 712). Regan (1997) suggests that independent agents and brokers bring higher competence in assessing risks, servicing the customer with complex products and oversee an uncertain market, than exclusive agents (Regan, 1997, p. 41). The difference between independent agents and brokers is attributed to the legal status. The distinction within the market is mainly the size, range, and depth of offered services. Independent agents tend to be smaller and have their customers in the local market, whereas brokers tend to be larger and service more complicated insurance needs. The largest international brokers offer a wide range of sophisticated services, including loss control services, risk modeling and management consulting (Cummins & Doherty, 2006, p. 361).

Bancassurance is the partnership between a bank and the insurance company. The insurer uses the bank as distribution channel and therefore the bank acts as the insurance agent or broker. Since the 1980s bancassurance is an important distribution channel for life insurance products. For non-life products it is less common (European Insurance and Occupational Pensions Authority, 2018, p. 12).

Direct business typically includes insurance undertakings to customers without the use of an insurance intermediary. This is mainly selling directly via employees or using distance communication like internet, e-mails and phones (European Insurance and Occupational Pensions Authority, 2018, p. 12). Thanks to the technological developments, direct writing has been growing and becomes a more and more important channel for selling non-life products (mostly MTPL and household insurance) for some member states (European Insurance and Occupational Pensions Authority, 2018, p. 13). Regan and Tennyson (2000)

describe this channel as mass marketing methods, which include mass mailings, television or radio advertisement, and the internet. Those methods do not involve an intermediary (Regan & Tennyson, 2000, p. 712).

Comparison websites, social media platforms and price-aggregators are constantly growing. Some markets use those as a significant distribution channels for some lines of business (mostly motor insurance). Customers use the online offering as a first port of call to receive comparable information about different insurance products, before contacting an insurance intermediary or take the final decision (European Insurance and Occupational Pensions Authority, 2018, p. 13).

3.1.2. Roles of intermediaries

Traditionally the role of an insurance intermediary is to guide the customers through the distribution process, consult for the best product while simultaneously lowering the distribution costs for the insurer and providing important information about the customers. Insurance intermediaries played a significant role in the past years (European Insurance and Occupational Pensions Authority, 2018, p. 25). EIOPA conducted a study within eight EU member states to identify a potential shift in the role of distribution channels. It can be noticed that there was no major shift in the role that intermediaries play in the insurance business. Also, bancassurance continued to stay an important channel, in recent years. The role that direct business plays nowadays is still a minor one even though the trend is increasing (European Insurance and Occupational Pensions Authority, 2018, p. 25). One explanation for the nonexistent changes is, that the relationship between the costumer and the insurer is based on trust. Therefore, still today many customers rely on the personal relationship and advice from their intermediary rather than the brand of the insurance company itself. The internet is changing the customer behavior as well and direct business offers a depersonalized relationship with the insurer. However, the increase in direct writing started slowly in Europe and still does not play a major role (European Insurance and Occupational Pensions Authority, 2018, p. 7).

In the European insurance market, the number of registered agents is higher than the number of brokers. However, the number of agents is decreasing. The two country examples

introduced in chapter 2.5. are non-representative for the overall EU development. Both, Austria, and Hungary, have an increasing number of intermediaries overall and the number of agents has risen as well. One explanation for the development in the European insurance market is that brokers provide the customer with a more sophisticated advice being able to compare a variety of products from many insurance companies. In addition, brokers are free to decide on their service offerings and independent of any insurance company identifying the best processes for his or her customer satisfaction (European Insurance and Occupational Pensions Authority, 2018, p. 8). The traditional distribution channels, such as brokers, bancassurance and agents, continue to be the predominant way of selling. Direct sales and comparison websites are becoming more popular in particular in some member states, such as Hungary and the United Kingdom (European Insurance and Occupational Pensions Authority, 2018, p. 39). A correlation analysis published in 2011 shows a significant negative relation between the agents' market share and direct business. A similar negative correlation is seen between agents' and brokers' market share. It can be interpreted that agents are being replaced by direct business and brokers (European Insurance and Occupational Pensions Authority, 2018, p. 8).

The role of the intermediary varies also across lines of business. Regan and Tennyson (2000) investigate that the distribution via agents is the dominant method for life insurance in the United States, Canada, Germany and Japan. Most life insurance agents are employed or self-employed exclusive agents. However, in the United Kingdom, brokers and financial advisors are the most significant channel selling life insurance. In European countries the bancassurance channel gaining more acceptance within the life segment, with Frances' bank sales representing over 50 percent of life insurance premiums (Regan & Tennyson, 2000, p. 716).

3.2. Remuneration Models

EIOPA identifies two main remuneration models in the EU, the commission-based and the fee-based model. The commission-based model is the most common one in most of the member states (European Insurance and Occupational Pensions Authority, 2018, p. 6).

3.2.1. Types of Remuneration Models

Within the **commission-based remuneration model** the intermediary is given a percentage of the premium paid by the insurer. There are different types of commissions paid at different stages, e.g. commissions paid at conclusion of the contract, commissions received at a recurring base or commissions based on the portfolio size (European Insurance and Occupational Pensions Authority, 2018, p. 33). Commissions paid by insurance companies are still the biggest source of income for independent intermediaries, where mainly related to signing a contract and not as an ex post payment (Focht, Richter, & Schiller, 2013, p. 330). There are big differences within the application of the commission-based remuneration model for the various intermediary types. Independent agents and brokers are typically compensated wholly by commissions. The commission rates vary for the different insurance products. In most cases new policies and renewal policies often receive the same commission rate. Some insurance companies pay a profit-contingent commission which is dependent on the loss ratio of the sold business. Exclusive agents are also paid by commission, but the rates tend to be lower than for multi agents and brokers. Also, the rate for renewal business is generally lower than for new business. Exclusive agents are less likely to receive profit-based commissions. Exclusive agents may receive other forms of compensation in addition to the commissions, such as company benefits. Insurance companies tend to provide exclusive agents with trainings and support services rather than independent agents and brokers (Regan & Tennyson, 2000, p. 715). The agent compensation in life insurance is largely based on commissions. Life schemes are generally weighted heavily toward incentivizing new policies rather than renewals or profitability. A large part of the first year premium paid by the customer is given to the intermediary. Only a small amount of commission is paid for renewal premiums (Regan & Tennyson, 2000, p. 719). Ma, Pope, and Xie (2014) argue that the commission-based remuneration model disincentivizes intermediaries to fully share customer information fearing that the insurer might decline the business with this customer (Ma et al., 2014, p. 62). The economic rationale for the commission-based remuneration model is achieving economies of scale, which comes along with a desirable spread of risk in the underwriting portfolio. The cost of working with any intermediary is seen to be constant and having a larger portfolio decreases the cost per intermediary. Additionally, the insurance company reaches a higher diversification of risk with a larger volume (Cummins & Doherty, 2006, p. 380).

Within the **fee-based remuneration model** the customer pays a fee to the intermediary for the service. This fee can be charged on an hour-basis, as a percentage of the premium or as a fixed amount. In comparison to the commission-based model the fee is considered as more transparent for the customer. The disadvantage is that the fee needs to be paid up front before concluding a policy (European Insurance and Occupational Pensions Authority, 2018, p. 33). The fee-based model is an alternative compensation model because of the concerns about unethical behavior that comes within the commission-based model. The hypothesis is that intermediaries receiving a fee for their advice have no incentive to offer a specific product that would have brought higher commissions (Regan & Tennyson, 2000, p. 739). Fees are most common for insurance needs where a significant part is the risk management and risk transfer. The intermediaries provide services to the customer, such as risk modeling, risk management consulting, loss mitigation and claims management (Cummins & Doherty, 2006, p. 376). The fee is related to the service and not necessarily for the concluded policy. The usage of fee-based remuneration is most common for large brokers (Cummins & Doherty, 2006, p. 379).

In some other cases the remuneration model of an intermediary can be a mixed one. The insurer pays commission to the intermediary while the customer pays a fee for advising and managing the contract. Employees of insurance companies typically have a fixed remuneration with a variable component, such as a bonus. The fixed remuneration for a sales staff is based on an employment contract and is paid out in equal proportions over the year. The variable remuneration depends on the performance of the sales staff. The performance measures vary by company. The variable remuneration will decrease if the employee does not reach the defined performance thresholds (European Insurance and Occupational Pensions Authority, 2018, p. 33).

Contingent commissions are ex post payments from the insurance company to the intermediary based on various performance criteria, such as profitability of the intermediaries' business or the portfolio volume with that specific insurer (Focht et al., 2013, p. 330). They are paid retrospectively to align the production goals of intermediaries to the targets of the insurance company. The traditional remuneration models, such as volume-based commissions or fee-based compensation, are paid up-front. The insurance business bears the unique feature that the actual value of a sold product cannot be known until all future claims has been made.

So, for any risk an insurance company takes, the true value will reveal only much later (Ma et al., 2014, p. 61). Using contingent commissions incentivizes the intermediary to use the knowledge about the customer to better match with the desired risk profile of the insurer. Therefore, the insurers goals of the profitability of the business are met (Ma et al., 2014, p. 62). Contingent commissions have a negative relation to loss and combined ratio and simultaneously a positive effect on the underwriting return on equity (Ma et al., 2014, pp. 64–65). Contingent payments are only paid when the underwriting profitability of a business is improved (Ma et al., 2014, p. 68). The information asymmetries are the most crucial risk for the insurance company. The intermediary can increase the value of underwriting information about the customer. Therefore, contingent commissions are especially important aligning incentives for sharing this information (Cummins & Doherty, 2006, p. 376).

After analyzing the different remuneration models, the question arises which of those approaches is the best one to incentivize insurance intermediaries. Regan and Tennyson (2000) investigate the optimal design of a remuneration model for sales agents. The assumption is that sales agents are self-interested and therefore need to be externally motivated to act in the interest of the insurance company. Furthermore, it is assumed that agents have clear information about their own effort, their abilities and market conditions related to sales. Because of information asymmetries a direct monitoring and steering is not possible for the insurer. In this environment the compensation system alone can incentivize and motivate the agent to act in the interest of the company (Regan & Tennyson, 2000, p. 736). To motivate a risk-neutral agent the simplest form is to pay commissions only. This is the least costly method and motivates the agent to act in the interest of the company. A risk-averse agent needs a remuneration model with a fixed component, such a salary. Even though, the payment of a salary plus commissions is more costly, sharing the risk with the agent provides the best work incentive for a risk-averse agent. Regan and Tennyson (2000) showed that straight commission without a fixed component are a poor instrument for building long term relationships between the intermediary and the insurer. Commissions only does not give the agent the necessary motivation to invest in company-specific human capital. A solely commission scheme is only preferred when the sales force should be replaced very easily, otherwise the optimal compensation scheme also involves a salary component. The share of the fixed part regarding the overall compensation should be reflected by the trade-off between effort incentives and relationship-building. Contrary to tied agents, independent intermediaries, such as multi agents and brokers, generally only receive commissions. This remuneration model bears greater earning opportunities, leaves the whole risk of earning with

the intermediary and also has a weaker relationship to one single insurer (Regan & Tennyson, 2000, p. 737). Focht et al. (2013) compare the fee-based and the commission-based remuneration model for independent intermediaries. They assess the impact on the quality of advice based on the chosen remuneration system (Focht et al., 2013, p. 329). The outcomes show that the overall welfare increases whenever the intermediary is profitable and that both systems are payoff equivalent. The underlying assumption is the honest and the nonstrategic behavior of the intermediary (Focht et al., 2013, p. 341). Gravelle (1994) argues that a commission system gives a higher incentivization to provide biased advice to an unsophisticated potential customer, than a fee-based system would (Gravelle, 1994, p. 425).

Analyzing the optimal remuneration model already provides evidence for the core problem of insurance distribution. The honest behavior of the intermediary, the qualitative advice for insurance products and sharing the customers' information with the insurance company is endangered, depending on the remuneration model.

3.2.2. Unethical behavior based on intermediaries' compensation

In October 2004, a big lawsuit was filed against the global broker Marsh&McLennan. They were accused of unethical and illegal distribution practices. This lawsuit and many others that followed have created controversy against the role of intermediaries in insurance transactions. Especially the compensation models support anticompetitive practices which lead to negative results for the customer (Cummins & Doherty, 2006, p. 360). Cupach and Carson (2002) investigate potential unethical sales practices in the insurance market. The reason for their studies was the increasing number of lawsuits against illegal sales practices in the United States. The widespread publicity argues that the ethical conflict for insurance intermediaries derive from straight commission compensation. Sales professionals perceive the false or misleading representation of insurance intermediaries and their sales practices as the most important problem in the insurance industry (Cupach & Carson, 2002, p. 167). The competitive insurance market and the regulatory changes put the intermediary remuneration practices into focus. Insurance intermediaries are most commonly compensated via commissions and there is a large attention on examining the effects of such commission payments on agents and potential unethical sales practices in particular (Regan & Tennyson, 2000, p. 737). It has been argued that compensating an intermediary with commissions does not prevent and may even encourage the conflict of interests between the intermediary and the customer. An agent might recommend a product because it generates a higher commission for

him or herself rather than the best possible product for the customer. This is the reason why the effects of commission compensation for sales intermediaries are criticized heavily. Nevertheless, studies on the commission compensation encouraging the unethical behavior are rare (Regan & Tennyson, 2000, p. 738). Kurland (1996) finds that the percentage of annual earnings from commissions does not affect the unethical behavior toward customers. Self-interest alone does not drive unethical behavior (Kurland, 1996, p. 67). Howe, Hoffman, and Hardigree (1994) provide indirect evidence for the effect of commission compensation and unethical behavior. They state that agents with a higher customer orientation (and a lower sales orientation) have higher ethical standards in their sales practices. If commission compensation encourages a higher sales orientation, then the link to unethical sales practices could be drawn (Howe et al., 1994, p. 505). Agents in a highly competitive environment are more likely to follow unethical sales practices. A direct link between the effect of compensation to the ethics is not found. Most studies identify a complex set of factors that influence the intermediaries ethical behavior, such as management practices, corporate code of ethics, competitive pressure and the compensation system (Regan & Tennyson, 2000, p. 738). Skipper (1995) suggests that the intermediary compensation model, that was seen as the standard in the market, is the motivation for unethical agent behavior. But empirical research at that time failed to demonstrate the existence of this relationship. Therefore, Cupach and Carson (2002) tested the influence of different compensation systems on recommending different products (Cupach & Carson, 2002, p. 167). When asking agents directly, most agents say that they act responsibly and in the interest of their customers. Nevertheless, the short-term interest of the company and the long-term interest of the customer are contradictory interests of the agent (Cupach & Carson, 2002, p. 168). Within the context of agency relationship, it is assumed that the commission compensation system aligns the intermediary's interest more closely with the interest of the insurance company rather than the customer. The behavior of the intermediary will therefore favor the interest of the insurer over the interest of the customer. The agent will sell products that bring the maximum benefit to the insurer rather than for the customer. Ironically, the compensation model that is based on commissions only, with a strong push for new policies rather than renewals, incentivizes the short-term relationship rather than building a long-term trust (Cupach & Carson, 2002, p. 169). The study showed that the amount of coverage recommended by the agent is not affected by the compensation. Also, the type of product recommended does not differ based on the agents' compensation. An unanticipated finding from Cupach and Carson (2002) was based on the gender of the customer. The agent recommended a higher coverage for a male customer than

for a female customer. The results indicate that neither the amount of coverage nor the type of recommended products is influenced by the alternative compensation (fee and commission compensation) models (Cupach & Carson, 2002, p. 172). This finding supports the assumption that the unethical behavior of sales agents may be exaggerated. One limitation that the researchers see is the solely look on base compensation scheme. The bonus income after receiving targets over a longer time horizon plays a significant role and was not represented in their studies (Cupach & Carson, 2002, p. 173). Ma et al. (2014) investigate the relationship of contingent commission and the performance of the intermediary. Two ways of performance are measured, the overall efficiency (cost and revenue) and the financial performance (return on assets and return on equity) (Ma et al., 2014, p. 65). The findings reveal that the relationship is based on a variety of factors, such as the distribution system in place (Ma et al., 2014, p. 73). It is highlighted that the usage of contingent commission is not a straight solution for the principal-agent problem and highly dependent on the business model as well (Ma et al., 2014, p. 78). Users of contingent commission do not bring greater efficiency to the insurer than nonusers do. In combination with the business model and the distribution system in place, contingent commissions can bring a better company result and represent a rational choice of remuneration model (Ma et al., 2014, p. 79).

Analyzing the insurance intermediary market, the roles of intermediaries, the various remuneration models and the unethical behavior connected to those compensation approaches, has shown a big potential of a conflict of interest within the remuneration context. The assumption that the incentive system is the source for unethical behavior requires a deeper look into the relationship of all stakeholders (insurance company, insurance intermediary and customer) involved in the insurance distribution. Chapter 4 of this Theoretical Framework covers the interaction of all involved parties within the distribution process.

4. Principal Agent Theory

When discussing the unethical behavior of agents based on the incentivization of their insurers, a compatible theory appears: the principal agent theory. This problem is also known as the agency dilemma, which occurs when the agent is motivated to act in his or her own interest, which is contrary to the interest of the principal. This chapter picks up this theory and brings it together with the

insurance incentivization approach. Incentives in insurance should be analyzed in consideration and with the understanding of the principal agent dilemma (Laffont & Martimort, 2002, p. 2). The principal agency theory is seen as one explanation for the unethical behavior of the intermediary in the insurance distribution process. This theory is already discussed heavily in the empirical research. The following chapter provides a summary of research and studies done since 1998.

Güth, Klose Wolfgang, Königstein, and Schwalbach (1998) explain the principle agent problem as the separation of ownership and control in modern corporations. They argue that financial incentives are a key element in contracts to motivate managers with conflict of interest appropriately. The purpose of the empirical study is to show how financial incentives compete with the intrinsic motivation of the principal and the agent.
The 64 participants, who were students of economics or business administration, were divided into two group and assigned the role of principal and agent. The principals offer an employment contract specifying a wage, a required effort level and a fine if the agent does not meet the required effort level. The principal has almost no possibility to monitor the agent. The agents can now select a contract and choose the effort level (Güth et al., 1998, pp. 327–329). The principal agent theory is built on incentives, but the actual behavior is better explained by trust. Within an ongoing relationship trust and reciprocity are the key factors, which can be hardly tested in a laboratory setting. The results from the study reveal that even when the principal can hardly monitor the behavior of the agent, the behavior is not purely opportunistic in an economic sense. This can be seen as good news for the principal, because there are many situations in which the principal needs to trust the agent (Güth et al., 1998, pp. 339–340).

Keser and Willinger (2000) examined the behavior in a simple principal-agent game with hidden information. They explain the situation by giving the example of an insurance contract. The actions taken by the insured person (the agent) in order to prevent a certain risk affects the expected profit of the insurer (the principal). The actions taken by the insured person cannot be monitored by the insurer, therefore it is the challenge of the insurer to design a contract that motivates the insured person to take the right actions. If the insurer offers a contract where all the risk is covered by the insurer, the insured person will take no action to reduce the risk. This describes the problem of moral hazard. The insurer can potentially solve this by offering incentives. In order to motivate the insured person to take the right actions to reduce the risk, the insurer needs to design a contract which leaves some risk to the insured person.

The experiment randomly assigns participants from the University of Karlsruhe the role of a principal and of an agent and matches them together. The principal offers a contract, with either high or low gain and more costly or less costly activity. The agent can accept and choose an activity or reject the contract. This situation is called an ultimatum structure with a take-it-or-leave-it offer. They found out that participants in the role of the agent tend to choose the actions which maximize their expected profits. Participants in the role of the principal offer contracts which differ from the theoretical predictions (Keser & Willinger, 2000, pp. 163–165).

Anderhub, Gächter, and Königstein (2002) study the behavior within a simple principal-agent experiment. They describe that the important aspect of the principal-agent relationship is that the agent does not act in the best interest of the principal. The reason for this is asymmetric information either between the agent and the principal or between them and a third party. The principal is aware of the optimizing and selfish behavior of the agent and acts accordingly (Anderhub et al., 2002, pp. 5–6). Anderhub et al. (2002) tested 94 students at the University of Zürich in an experimental game that consists of six repetitions. The participants were randomly allocated to their roles. Participants with the role as principal can create contracts with any combination of a fixed wage and return share between 0 and 100%. First the principal designs a work contract and offers it to the agent. It is a take it or leave it offer. Then the agent accepts or rejects the contract. If the contract was accepted, the agent chooses the work effort (Anderhub et al., 2002, p. 8, 2002, p. 12). The researchers found a high degree of incentive-compatible behavior. The experiment demonstrates that fair sharing and reciprocity has a significant influence on the agency behavior. Most agents are willing to choose the optimal effort level or even go beyond this for reciprocal reasons. Agents tend to reject unfair offers (Anderhub et al., 2002, p. 25).

Kirstein (2008) conducted a principal agent experiment assigning participants to the role of employer and employee. 160 students from the University of Karlsruhe were randomly assigned to the role of principal (employer) and agent (employee) and put together in pairs, which played 5 rounds. The agent's task was to proofread a text in ten minutes. During this time, the agent could use the computer and internet to search for errors or surf the internet. It was explicitly mentioned that the agent could check private emails or read the newspaper as well. The principal was unable to monitor what the agent is doing in these ten minutes. The text contains exactly ten typographical errors, which was unknown to both, principal and agent. The principal could choose from four different options for the agents, the pure fixed pay, which is neither reward nor punishments, the carrot, which is reward only,

the stick, which is punishment only, and the carrot/stick, which is both, reward and punishment (Kirstein, 2008, pp. 284–285). The results show that the performance increases with the reward options and decreases within a punishment option. Those findings are consistent with many previous findings from psychological studies. The participants filled an open questionnaire and in the fixed pay option they stated that they are intrinsically motivated. They named a few motives, like "sense of duty", "responsibility", "colleagueship", or "joint profit maximization". For agents who filled the questionnaire but had the other three monetary options those statements were made only half as often. Therefore, working on a fixed pay does not necessary mean that the performance is lower, but could induce a work ethic which is not solely based on extrinsic monetary incentives (Kirstein, 2008, pp. 298–299).

Gächter and Königstein (2009) present a simple classroom experiment with a principal agent game. They state that principal agent problems give the agents an incentive to behave opportunistic and to decrease their effort level. In their experiment, the participants take the role of a principal and design a contract which is offered to an agent. The contract can consist of a fixed payment, an earning share, or both. The participants in the role of the agent, receive the contract and decide on their individual effort level. (Gächter & Königstein, 2009, pp. 173–174). The results show that a fixed payment gives the agent the inventive to decrease the effort level and shirk. Therefore, a more complex contract is needed to avoid this shirking problem. A principal who understands this situation needs to create a contract with an earning share of at least 80%. This contract motivates the agent to increase the effort level to a maximum (Gächter & Königstein, 2009, pp. 175–177).

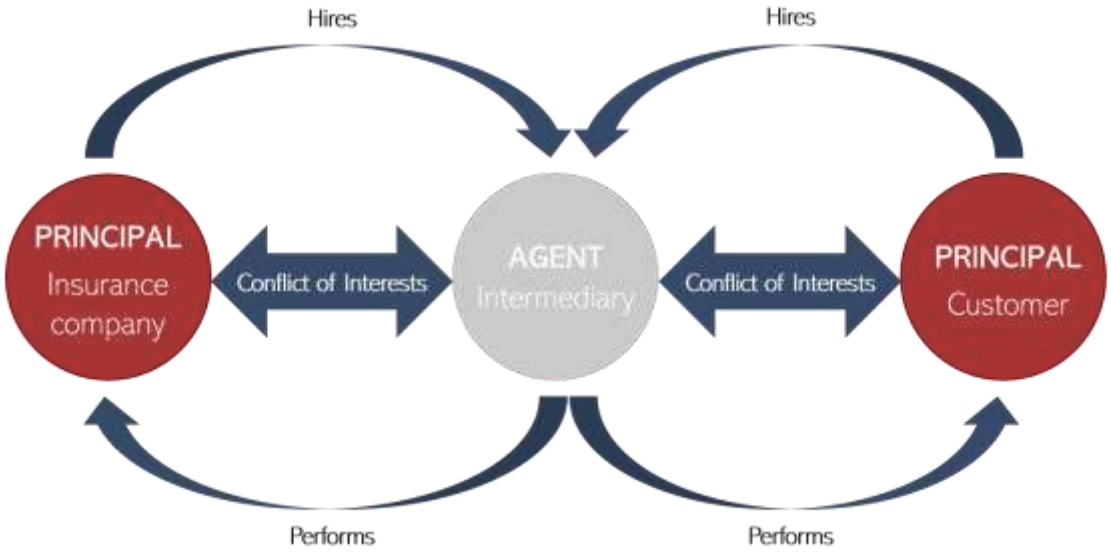
Eisenkopf and Teyssier (2016) investigate the behavior in a competitive environment and the effects of tournaments. They describe the tournament as an effective mechanism to increase the effort from unmotivated agents. The tournament is implemented by a principal who benefits from the effort of the agents (Eisenkopf & Teyssier, 2016, p. 127).

The 102 participants from the University of Konstanz were organized in groups of three, consisting of one principal and two agents. They repeat the experiment in the identical group for 20 times. The principal chooses the contract consisting of a guaranteed payment and a price dependent on the effort. There are two different treatments in the experiment. First, in the winner-takes-all treatment the prize goes to the agent with the higher performance. Second, in the winner-takes-more treatment the prize is distributed among both agents. The second treatment is similar to a bonus scheme in a company where the bonus budget is fixed and distributed among all agents based on their performance. The study showed that agents provide on average a higher effort for the winner-takes-all treatment than

for the winner-takes-more treatment, even though most agents were identified as risk averse (Eisenkopf & Teyssier, 2016, p. 128). It was observed that not only the effort from the agents was higher in the winner-takes-all treatment, but also the profit. Therefore, the principal has an advantage implementing a winner-takes-all tournament (Eisenkopf & Teyssier, 2016, p. 136).

The empirical research in the last 25 years show that the dilemma is real and clearly states various limitations for the principal to design contracts and incentive models. This is perfectly applicable for the insurance sector, where an even more complex dilemma can be found. Within the insurance context, the principal (insurance company) hires and agent (intermediary) to act on behalf of the principal. This situation faces two specific problems. First, there is a conflict of interests that occurs when the goal of the principal and the agent are not fully aligned. And the second problem comes up, when the agent tries to solve the conflict, which can result in adverse selection and moral hazard (Ma et al., 2014, p. 63), which will be described in more detail later in this chapter. The dilemma can be seen even more complex because intermediaries perform tasks on behalf of both, the policyholder, and the insurance company. The question needs to be raised if the insurance intermediary is an agent of the customer or the insurer. The principle is someone who hires the agent to act in his or her behalf, independent of defining who the principal is in the insurance context. The dilemma in the insurance context is shown in the figure below, highlighting that the aim is to eliminate the conflicts of interests. Within the principal agent relationship, the important observation is if the agent really acts in the best interest of the principal. The principal delegates a task to the agent and is not able to perfectly monitor the agent's behavior. Therefore, the agent has some freedom to act on his or her behalf. The agents' prioritization of the own interest is known as the principal agent problem and is a type of moral hazard. The attempted solution for this problem is designing an incentive-based compensation model that is fully aligned with the interests of the principle and therefore also the interests of the agent (Cummins & Doherty, 2006, p. 383). Jensen (1994) describes the theory of self-interest within the context of agency theory as the study within the behavioral science literature addressing the motivation for such actions. Self-interest can be consistent with altruistic behavior. The agent dilemma cannot be solved by relying on altruism of the agent, because concerning for the well-being of others does not help to perform a task in the principals interest (Jensen, 1994, p. 40).

Figure 6: Principal Agent Theory in Insurance Context



(Source: Author's visualization based on Laffont & Martimort, 2002, Ma et al., 2014, Cummins & Doherty, 2006)

As already discussed in chapter 2, the IDD specifies that the intermediary should act in the best interest of the customer and that the insurance company needs to make sure that the remuneration models target those interests. The insurance distribution situation faces a complex agency principal dilemma, where the principal (insurance company) hires the agent (intermediary) to act on behalf of the principal but simultaneously acts in the interest of a third party (customer).

4.1. Incentive Theory

When economists began to take closer looks at businesses, incentives became a central focus of their analysis. The owner of a business needs to delegate tasks and responsibilities to its members or employees. This delegation requires the management of information within the business. The first research topic for economists was this information flow and mastering the behavior under uncertainty. Delegating a task to an agent with different personal objectives than the delegating principal is problematic when facing imperfect information. This problem is the core of the incentive question. If the agent has a different objective but no private or hidden information, the principal could perfectly control the agent when delegating tasks. The conflicting objectives on the one side and the decentralized information on the other side are the basic parts that define the incentive theory. The main assumption is that the agent has at least to some extent private interests. This assumption is recognized as a chance to motivate the behavior of agents towards a beneficial behavior to the principal (Laffont & Martimort, 2002, p. 2). Another problem occurs when the agent performs many

tasks for the principal and therefore does not face a single-dimension incentive problem (Laffont & Martimort, 2002, p. 203). Contracts are rarely designed with only one objective for the agent but multiple tasks. Therefore, the principal needs to make sure that the agent has an incentive contract which affects the optimal mix of efforts of the agent's performance (Laffont & Martimort, 2002, p. 203). Jensen (1994) analyzes the meaning of incentives and argues that every powerful action is the result of some sort of incentivization. Incentives are applied whenever people have a choice between various actions. Even in organizations without a performance-based monitoring, incentives exist, which can be non-monetary as well. Organizations think of ways how to motivate their employees and therefore automatically use incentives. Money is not the best incentive to motivate people. The advantage of installing a strong monetary incentive is that almost all people value a higher purchasing power, which includes the enabling to do or buy other things that people are motivated by (Jensen, 1994, p. 42).

The private information that the agents have can be of two kinds. Either the agent takes unobserved action, which is called moral hazard or hidden action. Or the agent shares the private information about cost or valuation, but the principal ignores it, which is called adverse selection or hidden knowledge. The incentive theory covers the problematic scenario for the principal about the private information of the agent and discusses how to deal with this (Laffont & Martimort, 2002, p. 3).

4.2. Adverse Selection & Moral Hazard

Adverse selection is a concept of hidden information. Moral hazard is a concept of hidden action (Cohen & Siegelman, 2010, p. 71). When transferring those concepts into the insurance context we face a policyholder and an intermediary with hidden information and hidden action. The risk of an accident and a loss is the consequence of the policyholders' behavior. Without an insurance contract a policyholder normally invests in precautions measures to reduce the risk of a loss. When a person does not have a car insurance, he or she normally drives cautions not to cause an accident and create costs for himself or herself. When the insurance company bears the risk of a potential loss, the policyholder may reduce the precautious behavior. This presence of moral hazard is the reason for adding deductibles in the insurance contract. If the insurance company covers the full risk, there is no reason for the policyholder to act in a cautious manner. A deductible limits the payout and therefore splits the risk in case of a loss. The policyholder will be incentivized to further take precautions measures. The higher the share of loss covered by the insurer, the lower the level of cautious behavior

of the policyholder and therefore, the higher the expected loss. This scenario explains the correlation between coverage and loss. This coverage-risk correlation also appears within adverse selection. A policyholder with a higher risk profile will more likely chose an insurance contract with lower deductibles. Cohen and Siegelman (2010) see it as the most significant challenge to lead back policyholder's behavior either to adverse selection or moral hazard alone (Cohen & Siegelman, 2010, p. 71). In real world insurance settings, the principal deals simultaneously with both, adverse selection and moral hazard (Laffont & Martimort, 2002, p. 265). The Nobel Prize winning economist Kenneth Arrow brought the insurance concept of moral hazard into the neoclassical economic theory (Baker, 1996, p. 244). Baker (1996) studies the origin of moral hazard and states that reducing the consequences of bad behavior, encourage bad behavior. He furthermore states that less is more. Less product liability means safer homes, less disability insurance means more people without disabilities and less health insurance means more healthy people (Baker, 1996, p. 238).

The presence of hidden information and contradicting interests that are fueled by the remuneration model, give one explanation for the unethical behavior of the intermediary. The IDD, with its emphasis on customer focus and banning the conflict of interests, is a reaction to the existing theories and studies on unethical behavior of insurance intermediaries. One way of reducing these conflicts and putting the customer in the focus, is changing the remuneration model.

The presented theoretical framework showed the cornerstone of regulating the insurance business and its latest European regulatory framework, the IDD. Focusing strongly on the customer and aiming at aligning the intermediaries' interest with customers' satisfaction is the backbone of the IDD. Conflicts of interests result from unilateral remuneration models and wrong incentives for the intermediaries. The insurance distribution faces a principal agent dilemma with hidden information and hidden action. Based on the literature review and the identified gaps in research, an empirical study is performed and described in the next section.

III. METHODOLOGY

The methodology chapter explains how the empirical research was conducted, which methods were used and how the results were generated. Starting with the research purpose, the research questions and the hypotheses are presented. The chapter of research design shows how the study was designed and conducted. The third chapter provides insights about the data quality and shows how the data was analyzed. The last part of this methodology chapter shows the exploratory data analysis and uses descriptive statistics to understand the collected data. The research results and the answers to the research questions are shown as well.

1. Research Purpose

The IDD is the starting point and the backbone for this empirical research. As already mentioned in the theoretical framework above, the IDD is the latest insurance distribution regulation and is a significant milestone in strengthening consumer protection in the insurance sector (Veris & Goddet, 2018, p. 4). The IDD lays the foundation of a true customer centric insurance distribution approach. Before introducing the IDD, the customer interests have never been regulated in a European directive nor transposed into national law in a similar intensity. This strong first-time approach of customer interest in a regulatory framework is the purpose of making the customer interest the central item of this research work.

The IDD brings together the customer interest and the topic of inducements. The directive states that remunerating and incentivizing the insurance distributors should not in any way reduce the quality of servicing for the customer. Especially the remuneration based on sales targets should not provide an incentive to recommend a particular product to the customer (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b). The member states are responsible for introducing a remuneration model that is fully aligned with the interests of the customer. The insurance distributor should develop, adopt, and regularly review policies and procedures relating to conflicts of interest. The target is to avoid any negative impact on the quality of the relevant service to the customer (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b). The member states shall ensure that insurance distributors are not remunerated in a way that conflicts with their duty to act in the best

interests of their customers. In particular, an insurance distributor shall not create remuneration systems and sales targets that could provide an incentive to recommend a particular insurance product to a customer when the insurance distributor could offer a different insurance product which would better meet the customer's needs (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b).

Not only the European law emphasizes the change of the remuneration system, also acknowledged researchers in the field. Regan and Tennyson (2000) investigate the optimal design of a remuneration model for sales agents. The assumption is that sales agents are self-interested and therefore need to be externally motivated to act in the interest of the insurance company (Regan & Tennyson, 2000, p. 736). It has been argued that compensating an intermediary with commissions does not prevent and may even encourage the conflict of interests between the intermediary and the customer. An agent might recommend a product because it generates a higher commission for him or herself rather than the best possible product for the customer. This is the reason why the effects of commission compensation for sales intermediaries are criticized heavily (Regan & Tennyson, 2000, p. 738). Cummins and Doherty (2006) state that especially the compensation models support anti-competitive practices which lead to negative results for the customer (Cummins & Doherty, 2006, p. 360). Howe et al. (1994) state that agents with a higher customer orientation (and a lower sales orientation) have higher ethical standards in their sales practices. If commission compensation encourages a higher sales orientation, then the link to unethical sales practices could be drawn (Howe et al., 1994, p. 505). Cupach and Carson (2002) investigate that the commission compensation system aligns the intermediary's interest more closely to the interest of the insurance company rather than the customer. The behavior of the intermediary will therefore favor the interest of the insurer over the interest of the customer. The agent will sell products that bring the maximum benefit to the insurer rather than to the customer (Cupach & Carson, 2002, p. 169). The researchers see a big limitation in the overall empirical evidence, because the studies solely focused on base compensation schemes. The bonus income after receiving targets over a longer time horizon plays a significant role and was not represented in the studies (Cupach & Carson, 2002, p. 173).

As the IDD and the scientific literature focus on intermediaries' remuneration, this is the second research item. Here the empirical design will focus especially on sales targets, sales plan, and bonuses, rather than base commission, to fill this research gap.

The third area of the research performed is about the contradictory incentivization, which is also addressed in the IDD. The principal agent theory is well-known within the insurance context and seen as one explanation for the unethical behavior of the intermediary (Laffont & Martimort, 2002, p. 2). Within the insurance context, the principal (insurance company) hires and agent (intermediary) to act on behalf of the principal. This situation faces a specific problem, when the goal of the principal and the agent are not fully aligned (Ma et al., 2014, p. 63). The dilemma can be seen even more complex because intermediaries perform tasks on behalf of both, the policyholder, and the insurance companies. The attempted solution for this problem is designing an incentive-based compensation model that is fully aligned with the interests of the principle and therefore also the interests of the agent (Cummins & Doherty, 2006, p. 383). The insurance distribution situation faces a complex agency principal dilemma, where the principal (insurance company) hires the agent (intermediary) to act on behalf of the principal but simultaneously acts in the interest of a third party (customer). The purpose of this research is to identify if a remuneration system can align the interest of the intermediary, the customer, and the insurance company and therefore eliminate the conflict of interest.

The central purposes of this research work are the customer interest, intermediaries' remuneration and the conflict of interest. These three research items are the purpose of the empirical study, but the context still needs to be defined.

Even though the IDD provides clear guidance on designing remuneration schemes and preventing the conflict of interest, it does not target for a specific remuneration model. It allows member states to keep their existing remuneration system, but instruct it to remain free of conflict of interests and to be served in the best interest of the customer (European Insurance and Occupational Pensions Authority, 2018, p. 35). The IDD leaves the member state a lot of flexibility translating the requirements into national law. It is permitted to impose stricter rules and requirements in certain areas (Veris & Goddet, 2018, p. 37). When it comes to implementing the IDD into national law and being IDD compliant, the insurance industries in the various member states implemented the set of IDD requirements in a diverse speed (Veris & Goddet, 2018, p. 34).

Conducting an empirical research about core elements of the IDD and having in mind that the translation of the IDD into national law happened with a lot of flexibility, the best approach is to

investigate at least two different member states: Austria and Hungary. The reasons for the choice are differences and similarities, that potentially influence the research results:

- Hungary implemented the IDD in a speedy manner and already delivered for the initial transposition date in February 2018. Austria took advantage of the postponed transposition date in July 2018 (EUR-Lex, 2020a).
- The Austrian Authorities decided to apply even stricter rules for the remuneration of intermediaries. It is stated that the compensation of an intermediary should not in any way collide with the interest of the customer. Insurance companies are not allowed to incentivize intermediaries through commissions, sales targets or any other way to advise the customer for a specific product, when another product would fit the customer's needs better (Rechtsinformationssystem des Bundes, 2018). Hungary on the other side does not apply stricter rules or emphasize the intermediaries' remuneration in a special way.
- Hungary and Austria are both countries with a large agent channel. Despite the EU average of a shrinking agent channel, Hungary and Austria experienced an increase of their number of agents in the years 2017 and 2018. The insurance sector is split in various channels, where in Austria 52% are tied agents and in Hungary 48% (European Insurance and Occupational Pensions Authority, 2018, p. 35).

Not only the country is a required context for the research items, but also the respective distribution channel. As the focus lies in intermediaries' remuneration schemes, the classic distribution channels are at choice. Insurance brokers are independent of an insurance company and represent the customer and not the insurer. Therefore, the conflict of interest is not as challenging as for agents, which represent the insurer. Similar to brokers, multi-tied agents, which exist in some markets (in Hungary for example), are also independent businesses with contractual agreements with more than one insurer (Regan & Tennyson, 2000, p. 712).

The dependent intermediaries with sales targets, bonus agreements and a strong conflict of interest are in the focus of this research work. These are employed single-tied agent and non-employed single-tied agents. Both categories of sales agents sell exclusively for their insurer (Regan & Tennyson, 2000, p. 712).

1.1. Research Questions

Having the guidelines of the IDD and the scientific literature in mind, there is a huge potential to challenge the current remuneration approach. Insurance agents in Austria and Hungary have commission schemes and bonus agreements based on sales targets and sales plans. These targets and plans are based on key performance indicators (KPI) such as the amount of premium, or the number of policies sold. Different products have different commission rates and contribute a different portion to a yearly bonus. These KPIs are chosen by the insurance company to serve its own interest of maximizing the profit. As mentioned in the literature review, it is assumed that agents are self-interested and act in their own benefit. Therefore, agents will sell the products that maximize their own commission and bonus earned. The insurance company supports such a remuneration system because their own interest is to sell as much as possible. This situation describes the classic principal agent theory, ignoring the interest of the customer. Scientific research tends to blame the remuneration system itself for this unbalanced situation, where the agent acts in his or her own interest and not on behalf of the customer. When the guidelines from the IDD are taken into consideration, the customer interest needs to be put in the center to avoid the conflict of interest in the insurance distribution process.

What if adapting the remuneration system is not necessary, but changing the underlying performance KPIs? What if customer interest and customer satisfaction were the required KPIs to reach a bonus and receive extra commission? What if a customer centric sales approach would simultaneously increase the profit of the insurance company? Would agents with a customer centric sales target achieve the same sales result as with top-line targets? How would they self-assess their own sales performance with customer satisfaction as a sales metric? Will there be differences between Austrian and Hungarian agents?

The guiding questions above can be summarized to the following research questions:

- Can the conflict of interest within the insurance distribution process be eliminated, changing the underlying KPI from a top-line performance approach (like sum of premium or number of policies) to a customer centric approach (like customer satisfaction)?
- How will agents accept and appreciate a customer centric remuneration approach?
- How will agents estimate their own or the companies' sales performance, introducing a customer centric remuneration approach?
- How will the results differentiate between Austria and Hungary, rural and city, high and low performing agents?

1.2. Hypotheses

Considering the information received from the literature review and the assumptions made, the following hypotheses can be stated:

H1: Tied agents favor the customer centric remuneration approach over top-line performance driven remuneration.

H2: Tied agents estimate a positive change in their own sales performance (= sum of premium sold) and simultaneously a positive change in the customer satisfaction, when introducing a customer centric remuneration approach.

H3: Tied agents, who identify themselves as high performer, estimate a positive change in bonus payments, when introducing a customer centric remuneration approach.

H4: Austria's tied agents have a higher acceptance of a customer centric remuneration approach than Hungary's tied agents.

1.3. Objectives

This doctoral thesis follows three main research objectives. First, the research aims to identify which underlying KPIs are used in the bonus schemes for agents after the implementation of the IDD into national law. Moreover, the research identifies the importance of certain KPIs within the bonus agreement. After completing the research work, an overview of the current bonus landscape in insurance companies is available.

Second, the research examines the insurance agents' attitude towards a customer-centric remuneration approach. The agent's mindset and motivation are identified. It also provides transparency which groups of agents share which attitude towards a more customer-oriented concept, looking into years of experience, area of occupation and performance level.

Third, the outcome of this research work can help insurance companies in shaping high performing bonus agreements, which simultaneously reduce the conflict of interest and increase the customer satisfaction. The findings can be used in addition to the legal framework and suggestions from the IDD.

2. Research Design

This chapter covers the design of the study, the chosen research method, the sample, and the procedure. It gives a detailed look in the preparatory work describing the "how".

2.1. Study design

For this empirical research, the online study is chosen as the appropriate research method. This is a method not only used in market but also academic research. This data collection method is defined as a computer-assisted survey information collection (CASIC) (Fielding, Lee, & Blank, 2017, p. 6). Fielding et al. (2017) present the various modes of a CASIC, where they differentiate based on the interviewer involvement. In this research work, the online survey link was shared via email with the participants, and they filled out the online survey self-administered and self-paced, without any involvement of the interviewer. This mode is called a computerized self-administered questionnaire (CSAQ) internet survey. Internet surveys can further be split in two main types: web and email surveys (Fielding et al., 2017, pp. 144–146). The internet survey conducted in this research work was a mixture of web and email surveys, as the participants received a link via email to get redirected to a web browser where the online survey is opened.

The advantages of online surveys are on the one hand the reduced costs, ease of administration and error reduction and on the other hand the possibility to include design features. The advantages of CSAQs are that the participants can complete the survey at any time any place with any device and without the presence of an interviewer. Also, the speed of transmission is a positive factor. The

challenges of online surveys are recruitment, sampling, and non-response of participants. For this study an online survey software is used to create, design and translate the survey (Fielding et al., 2017, p. 7, p. 144). SurveyMonkey is an online survey platform specialized for market research and customer experience. This tool was chosen because it is an international provider with more than 17 million active users and is used by 98% of the Fortune500 companies. For the specific purpose of this research work, the SurveyMonkey tool offers to directly translate the surveys via translation files, add own logos, add various formats for desktop version and all mobile devices and download the full data set in Excel, SPSS or any other format (SurveyMonkey). The variations of the study can be seen in screenshots in Appendix A, B, and C.

Punch (2010) highlights the strong influence of the length of the questionnaire on the response rate. He states that it is better to have a shorter survey with a higher response rate than a longer survey where the dropout rate is high and the responses are low (Punch, 2010, p. 35). For this research work the number of questions was reduced to 17 and the average time for participants to fill out the online survey was 5 minutes. This is a major factor to motivate participants to fill out the survey.

2.2. Sample

The sample, which is defined as a smaller subset from a larger group of people, needs to be considered before starting the survey. The selection of the sample is crucial to ensure the relationship with the variables (Punch, 2010, pp. 36–37). For this empirical research, a list-based sample frame is used. This is the case, when a sample frame exist and individual invitations can be sent to selected participants (Fielding et al., 2017, pp. 148–149).

As already stated above, the sample was purposely defined. Employed and self-employed single-tied agents, who work exclusively for the top insurance companies in Austria and Hungary are in scope.

Due to confidentiality agreements with the insurance companies, the names of the companies cannot be mentioned in this work, but the respective market can be analyzed. Looking at the sum of premium of the insurance market, the participant from Austria work for insurance companies, which cover 63,08% of the entire Austrian insurance market in 2019 (statista, 2020). This is representative for the Austrian insurance market. In Hungary, the participants work for insurance companies, which cover more than 66,15% of the overall insurance market in 2017 (statista, 2019). This share is representative for the Hungarian insurance market.

2.3. Survey procedure

Fielding et al. (2017) differentiate between list-based and non-list-based internet surveys. For non-list-based surveys, a list of the target population does not exist. In this case, generally a link is shared on a website which can lead to self-selection bias. The higher data quality comes from list-based surveys with a proper invitation strategy. In this case, a sample frame exists and individual invitations can be sent to selected participants by email (Fielding et al., 2017, pp. 148–149).

For this research work, a mixed approach was used. Top insurance companies in Austria and Hungary were consciously selected based on their agent channel. Two out of eight insurance companies sent out the link to the online survey centrally. For the remaining six insurance companies the researcher created lists with email addresses of all agents. Those email addresses are available within the contact section of the insurance company homepage. In total, 2.672 emails with the link to the online survey were sent by the researcher. The number of emails sent centrally from the two insurance companies is unknown. Excluding the replies from the two insurance companies who sent out the links centrally, the response rate of the remaining valid replies (=263) is 9,84%.

Fielding et al. (2017) state that response rates in internet surveys are generally lower than for other survey models. A general invitation for non-list-based surveys may have less than one per cent response rate, but a personal invitation of members of an association can have up to 100 per cent. To increase the response rate, a monetary reward or any other incentive can be offered. Also, multiple contacts, such as pre-notice or follow-ups can increase the response rate (Fielding et al., 2017, p. 149).

For this research work, no monetary reward was offered. The researcher offered all participants in the email that a summary of the results will be shared for those interested. 34 participated took advantage of this offer and asked for the summary.

The insurance companies, who sent out the link centrally, also sent out a friendly reminder email after approximately two weeks.

In total 525 valid replies came back from participants in the period from 2nd of November 2020 to 13th of January 2021. In average the completion of the survey took five minutes.

After the first draft of the survey was designed, a **pilot testing** was conducted to identify possible mistakes and receive an overall feedback. The pilot testing happened in July and August 2020. The

first version was shared with 10 people outside the insurance industry and 10 people working as insurance sales agents. After the qualitative feedback was shared, some questions were simplified, the wording was changed, and some questions were even eliminated to reduce the length of the survey.

3. Data Analysis

This chapter looks at the quality of the data and the chosen data analysis strategy, which also covers the analysis tool.

3.1. Quality of data

The empirical research needs to ensure the highest possible quality of data. Looking at the quality of data, three concepts need to be considered: reliability, validity and response rate (Punch, 2010, pp. 41–42).

3.1.1. Reliability

The reliability tests the stability of response. This refers to the consistency of responses and answers the question if the same participants answer the same questions in the same way if they were asked again (Punch, 2010, p. 42). The reliability can have a value between 0 and 1, where 0 stands for no reliability, and 1 stands for a perfect reliability. A value above 0,8 can be seen as reliable and a value above 0,9 as very reliable (Schmidt-Atzert, Amelang, & Fydrich, 2012, p. 137).

- The **Split Half Reliability** measures the internal consistency, which shows how well the separate test components contribute to the items being measured. For calculating the split half reliability the odd even method is being used, where the test is split in the even questions and the odd questions (Schmidt-Atzert et al., 2012, 48, 140).

  Split-Half-Reliability = 0,7733

  The value of 0,77 for this survey is slightly below the threshold for reliability. One explanation is that the number of questions in the survey was reduced to a minimum to reduce the time participants need to fill out the survey and increase the response rate. That

is why the 17 questions are diverse questions which do not repeat the same statement again and do not test the stability of response in the best possible way.

- Another reliability quality coefficient is the **Cronbach's alpha**, which is calculated using this formula:

$$Cronbach's\ \alpha = \frac{k * \bar{r}}{1 + (k - 1) * \bar{r}}$$

k stands for the number of items on a scale and $\bar{r}$ is the average correlation coefficient of the items (Schmidt-Atzert et al., 2012, pp. 49–50). The reliability was measured for 17 items from 523 participants.

Cronbach's α = 0,7987

A value very close to 0,8 is reliable.

- The last reliability coefficient used for this test is the **Spearman-Brown prediction formula**, where the reliability is measured if the test would be longer or shorter (Schmidt-Atzert et al., 2012, pp. 48–49).

Spearman-Brown reliability = 0,8721

A value above 0,8 is reliable.

3.1.2. Validity

The validity tests if the data represent what should be measures. The question is answered if the responses really measure the variables that are intended to be measures (Punch, 2010, p. 42). There are three categories of validity that are measured for this empirical research: content validity, construct validity and criterion validity.

- The **content validity** is also known as the logical validity and measures to which extent all facets of a given construct are covered. A content valid test contains of consciously selected items and demand a good knowledge of the test area (Schmidt-Atzert et al., 2012, p. 145). The intense research work for the theoretical framework of this dissertation, and the business expertise of the author ensure a high content validity.
- The **construct validity** shows whether a test measures the intended construct. A construct cannot be directly observed but is an abstract concept with specific properties created by

the researcher (Schmidt-Atzert et al., 2012, pp. 147–149). The construct in this research work is the complex conflict of interest in the insurance selling situation.

- The **criterion validity** shows the operationalization of a construct. The test predicts the representation of the construct, which is seen as the criterion. The criterion validity is often split into measurement for predictor and outcome (Schmidt-Atzert et al., 2012, p. 146). The criterion validity for the research work can only be assumed and not tested. The current transformation within the insurance sector towards a customer centric orientation leads to the conclusion that the test shows a strong criterion validity.

3.1.3. Response Rate

The response rate is the proportion of the selected sample who completed the survey (Punch, 2010, p. 42). As described in the chapter "2.3. Survey procedure" above the response rate is difficult to calculate because a mixed approach of sending out the survey link was used. Two out of eight insurance companies sent out the link to the online survey centrally. The number of emails which were sent centrally from the two insurance companies is unknown. For the remaining six insurance companies the researcher created lists with email addresses of all agents. In total, 2.672 emails with the link to the online survey were sent by the researcher. Taking out the replies from the two insurance companies who sent out the links centrally, the response rate of the remaining valid replies (=263) is 9,84%. This share is seen positive, because there is no incentivization for the participants and no personal connection to the researcher.

3.2. Data Analysis Strategy

After the data is collected, the data needs to be cleaned before it can be analyzed. This exercise focuses on proofreading the responses, tidying up the data set and cleaning responses with missing elements or unclear answers (Punch, 2010, p. 45).

The data cleaning for this research work included the deletion of incomplete replies, identifying the comments in the section "Others" and allocating to the correct answers. After the cleaning, 523 valid replies were identified.

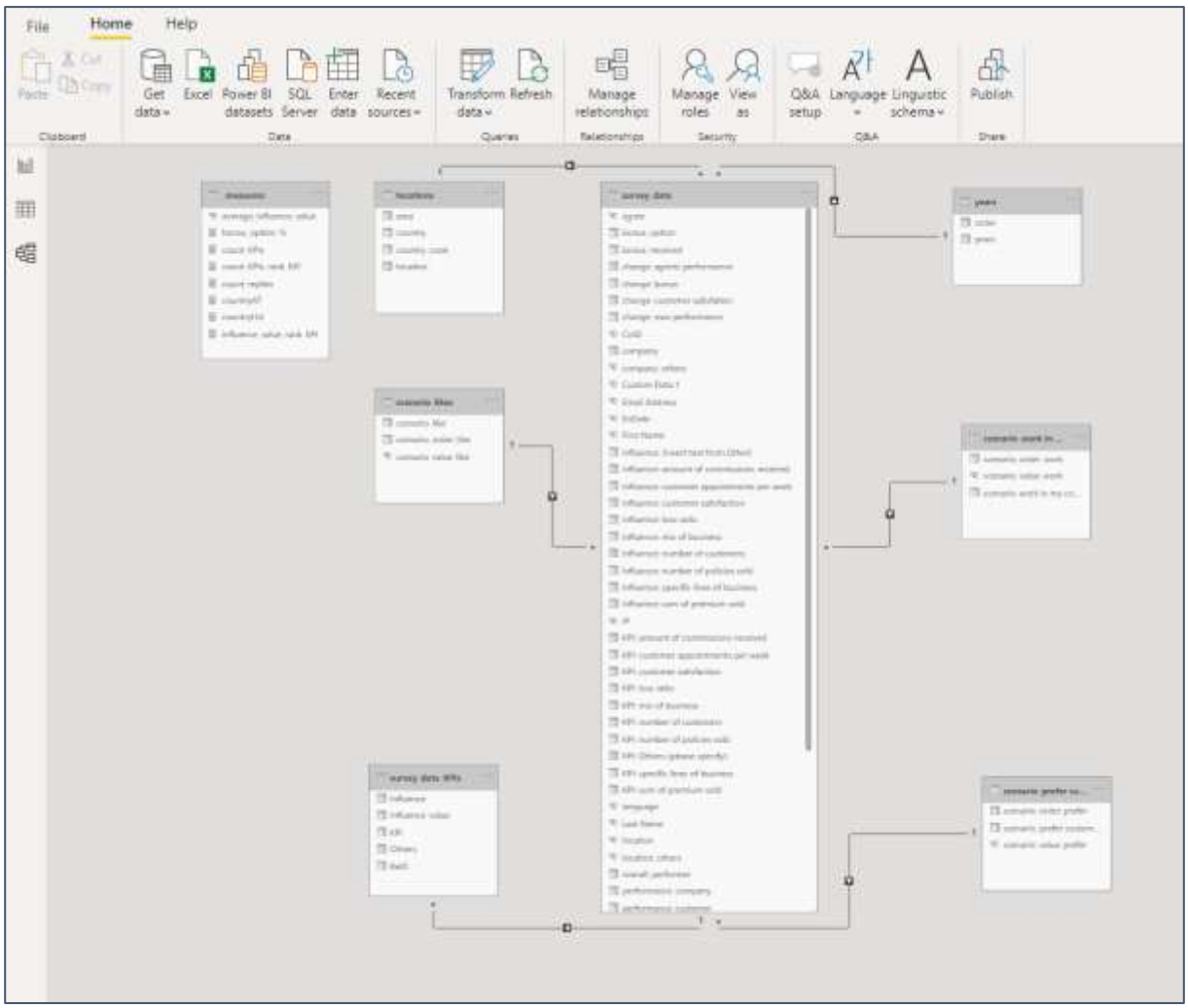
The next steps are to perform descriptive, explorative, and correlation analysis (Punch, 2010, p. 45).

The data derived from the online survey tool was downloaded as an Excel sheet and uploaded into Microsoft Power Business Intelligence (BI) for the analysis. Microsoft Power BI was chosen as the analysis tool because it is an analytics platform with built-in Artificial Intelligence (AI) capabilities, tight Excel integration and hundreds of data visualizations (Microsoft).

A data model can be built directly within Microsoft Power BI, as shown in the figure below, and additional measures, necessary for the analysis, can be created easily.

Additional calculations like the Chi Square tests were performed in Visual Studio Code using Phyton.

Figure 7: Data model in Microsoft Power BI



(Source: Screenshot from Microsoft Power BI data model from own research work)

4. Research Results

This chapter shows the research results without interpreting and evaluating the findings at first. The section focuses on showing the descriptive and explorative results and provide individual analysis for confirming or falsifying the four research hypotheses.

4.1. Variables and Measurement Scales

This sub-chapter shows all variables, the respective question in the survey, the values, and the scale. This provides a clear picture and provides a starting point for the result analysis.

Table 3: Variable view

Variable	Question	Values	Scale
location	The location where the majority of my customers are located	1 = In Austria in a City 2 = In Austria in the Countryside 3 = In Austria City and Countryside 4 = In Hungary in a City 5 = In Hungary in the Countryside 6 = In Hungary City and Countryside	Nominal
role	My Role	1 = Employed exclusive sales agent 2 = Self-employed exclusive sales agent	Nominal
company	My Company	1 = (information hidden) 2 = (information hidden) 3 = (information hidden) 4 = (information hidden) 5 = (information hidden)	Nominal
years	How long have you been working in insurance sales?	1 = < 2 years 2 = 2-5 years 3 = 6-10 years 4 = 11-20 years 5 = > 20 years	Ordinal
bonus_option	Do you have the option to receive a bonus or an incentive payment in addition to regularly paid commissions?	1 = Yes 2 = No	Nominal
bonus_received	Did you receive a bonus or incentive payment in 2019?	1 = Yes 2 = No	Nominal
KPIs for bonus	What are your underlying KPIs to receive a bonus or incentive payment? (multiple answers possible)	1 = sum of premium sold 2 = number of policies sold 3 = number of customers 4 = loss ratio 5 = customer satisfaction 6 = mix of business 7 = specific lines of business 8 = customer appointments per week 9 = amount of commissions received 10 = Other (please specify)	Nominal

KPIs influence	How big is the influence of the respective KPI to receive a bonus or incentive payment?	1 = small influence 2 = important influence 3 = very important influence	Nominal
performance_overall	How would you rate your overall performance in 2019?	1-10	Interval
performance_customer	How would your customers rate your performance in 2019?	1-10	Interval
performance_company	How would your company rate your performance in 2019?	1-10	Interval
like scenario	I like this scenario	1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree	Ordinal
prefer customer centric bonus	I prefer a customer centric bonus concept over a top-line performance driven one.	1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree	Ordinal
scenario work in my company	This scenario can work in my company.	1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree	Ordinal
change_own performance	What do you think, how would your sales performance, which is the sum of premium sold, change with this new concept? (in%)	(-)100% - (+)100%	Interval
change_agents performance	What do you think, how would the overall sales performance of agents in your company change? (in%)	(-)100% - (+)100%	Interval
change_customer satisfaction performance	What do you think, how would the satisfaction of your customers change? (in%)	(-)100% - (+)100%	Interval
change_bonus	What do you think, how would your bonus or incentive payment develop with the new approach? (in%)	(-)100% - (+)100%	Interval

(Source: Author's survey items, Ho, 2017, pp. 29–31)

4.2. Descriptive and Explorative Analysis

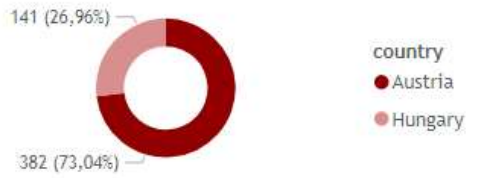
In total 523 valid replies come from participants in the period from 2nd of November 2020 to 13th of January 2021.

The participants state the insurance company they are working for. Due to confidentiality agreements the names of the companies are not mentioned in the research work. Participants from eight insurance companies participate in the survey. Four located in Austria and four located in Hungary.

73% of the participants are in Austria and 27% in Hungary, as shown in the figure below.

Figure 8: Descriptive result country

country	number of participants	% of participants
Austria	382	73,04%
Hungary	141	26,96%
Total	**523**	**100,00%**

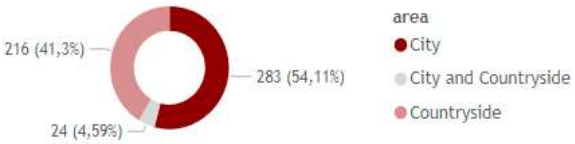


(Source: Microsoft Power BI research results)

54% of the participants have most of their customers in a city, 41% in the countryside and 5% both, as shown in the figure below.

Figure 9: Descriptive result area

area	number of participants	% of participants
City	283	54,11%
Countryside	216	41,30%
City and Countryside	24	4,59%
Total	**523**	**100,00%**

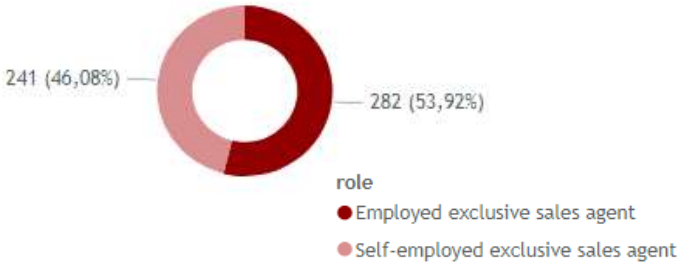


(Source: Microsoft Power BI research results)

54% of the participants are Employed Sales Agents and 46% are Self-employed Sales Agents, both working exclusively for their insurance company, as shown in the figure below.

Figure 10: Descriptive result role

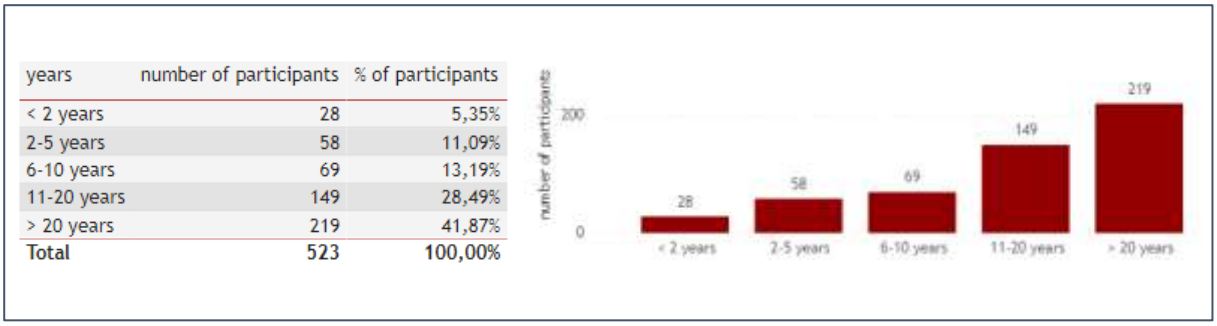
role	number of participants	% of participants
Employed exclusive sales agent	282	53,92%
Self-employed exclusive sales agent	241	46,08%
Total	**523**	**100,00%**



(Source: Microsoft Power BI research results)

58% of the participants have been working for less than 20 years in insurance sales and 42% for more than 20 years, as shown in the figure below.

Figure 11: Descriptive result experience in insurance sales



years	number of participants	% of participants
< 2 years	28	5,35%
2-5 years	58	11,09%
6-10 years	69	13,19%
11-20 years	149	28,49%
> 20 years	219	41,87%
Total	**523**	**100,00%**

(Source: Microsoft Power BI research results)

66% of the participants received a bonus or incentive payment in 2019 and 34% did not.

The participants rate three different performance levels in 2019 on a scale from 1 (very bad) to 10 (excellent). On average the participants rate their own overall performance, how their company rates their performance and how their customers rate their performance with 8, as shown in the figure below. The customer view on the performance is slightly more positive that the companies view on the performance, but all three levels very similar.

The average value of "own overall performance" is 7,89 with a standard deviation of 1,65. The average value of "performance rated by company" is 7,55 with a standard deviation of 2,00. The average value of "performance rated by customer" is 8,32 with a standard deviation of 1,62. All three variables have a minimum value of 1 and a maximum value of 10.

Figure 12: Descriptive result performance

(Source: Microsoft Power BI research results)

To identify the low and high performers, the rating of the own performance, was split. Participants who rate themselves with 1-5 are low performers and participants who rate themselves with 9-10 are high performers. In total the survey responses include 54 low performers and 193 high performers.

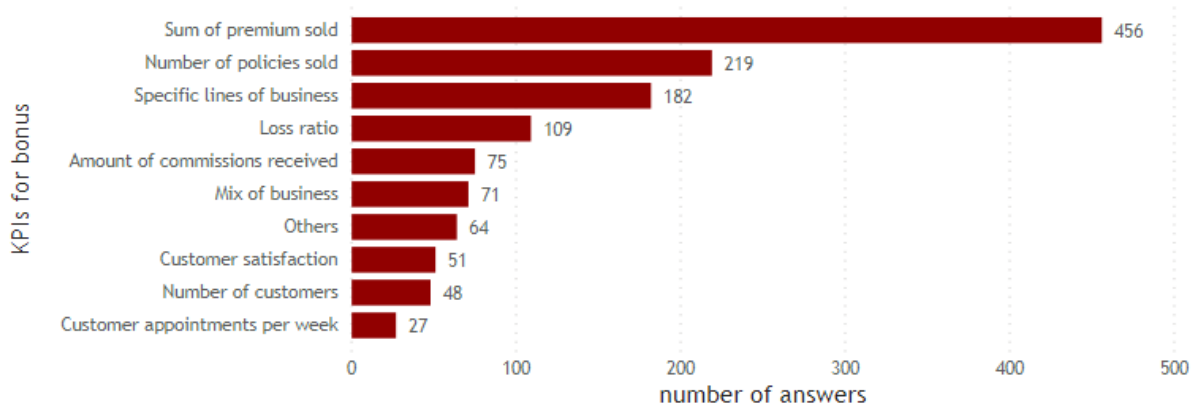
Within the next section in the survey, the participants fill out which KPIs are relevant to receive a bonus or incentive payment. For this question multiple answers are possible. In total 1.302 answers were given, which means that on average 2,49 KPIs per participant are required to receive a bonus.

The 3 top-line performance driven KPIs ("sum of premium sold", "number of policies sold", "specific lines of business") together cover 66% of all bonus KPIs, whereas the 3 customer-oriented KPIs ("customer satisfaction", "number of customers", "customer appointments per week") together only cover 10%, which can be seen in the figure below.

The category "Others" covers individual replies of KPIs such as growth of commissions, individual agreement with manager, digital customer data like mobile number and mail address, training hours, claims settlement, combined ratio, sales competition, handled claims and regular campaigns.

Figure 13: Descriptive result KPIs to receive a bonus

KPIs	number of answers	% of answers
Sum of premium sold	456	35,02%
Number of policies sold	219	16,82%
Specific lines of business	182	13,98%
Loss ratio	109	8,37%
Amount of commissions received	75	5,76%
Mix of business	71	5,45%
Others	64	4,92%
Customer satisfaction	51	3,92%
Number of customers	48	3,69%
Customer appointments per week	27	2,07%
Total	**1302**	**100,00%**



(Source: Microsoft Power BI research results)

4.2.1. Scenario Results

In the survey the participants are asked to image a scenario where the one and only underlying KPI to reach a bonus is the customer satisfaction. The entire bonus budget will be distributed among the agents solely based on the satisfaction of their customer. As an example, the classic 5-star rating (as known from hotel bookings, restaurant visits or Amazon products shopping) is introduced. The participants are asked to evaluate this scenario.

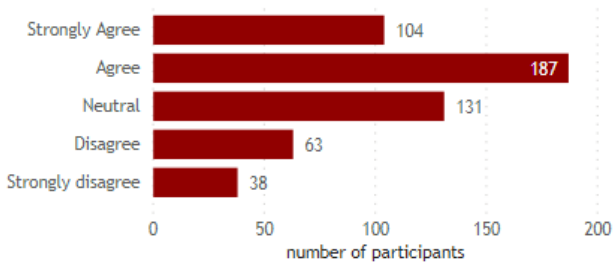
The participants are asked to evaluate 3 statements on a 5 level Likert scale from “strongly disagree” to “strongly agree”.

Statement number one: **“I like the scenario”**

56% of the participants agree to this statement and like the scenario whereas only 19% do not. The average value is 0,49 (where -2 stands for “strongly disagree” and 2 stands for “strongly agree”), as shown in the figure below.

Figure 14: Descriptive result scenario "I like"

scenario "I like"	number of participants	% of participants
Strongly Agree	104	19,89%
Agree	187	35,76%
Neutral	131	25,05%
Disagree	63	12,05%
Strongly disagree	38	7,27%
Total	523	100,00%



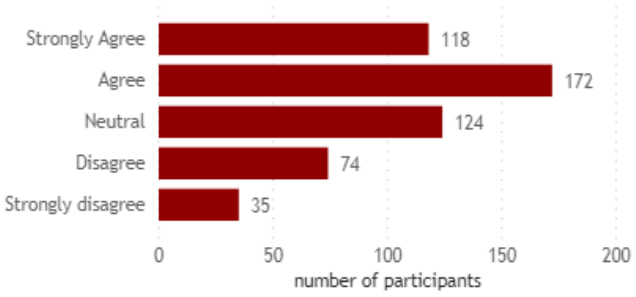
(Source: Microsoft Power BI research results)

Statement number two: **“I prefer a customer centric bonus concept over a top-line performance driven one”**

55% of the participants agree to the statement and prefer the customer centric bonus concept whereas only 21% do not. The average value is 0,50 (where -2 stands for “strongly disagree” and 2 stands for “strongly agree”), which can be seen in the figure below.

Figure 15: Descriptive result scenario "I prefer"

scenario "I prefer"	number of participants	% of participants
Strongly Agree	118	22,56%
Agree	172	32,89%
Neutral	124	23,71%
Disagree	74	14,15%
Strongly disagree	35	6,69%
Total	523	100,00%



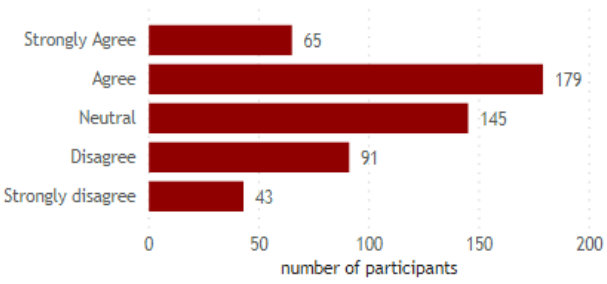
(Source: Microsoft Power BI research results)

Statement number three: **"This scenario can work in my company"**

47% of the participants agree to the statement and think that this can work in their company whereas only 26% do not. The average value is 0,25 (where -2 stands for "strongly disagree" and 2 stands for "strongly agree"), which can be seen in the figure below.

Figure 16: Descriptive result scenario "can work"

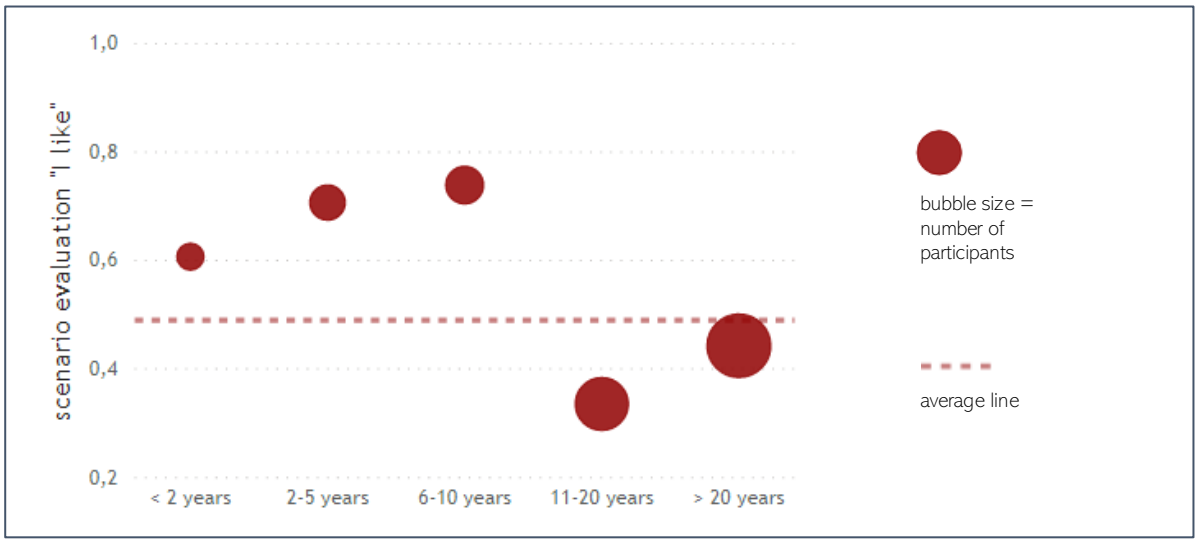
scenario "can work"	number of participants	% of participants
Strongly Agree	65	12,43%
Agree	179	34,23%
Neutral	145	27,72%
Disagree	91	17,40%
Strongly disagree	43	8,22%
Total	523	100,00%



(Source: Microsoft Power BI research results)

Making a deep dive into the scenario results, some insights can be shown. Evaluating the replies from the first statement "I like the scenario" in detail, three main findings can be seen. Participants with more than 10 years insurance sales experience like the scenario below average, whereas participants with less than 10 years of experience like the scenario above average, as shown in the figure below.

Figure 17: Insights for scenario "I like" experience

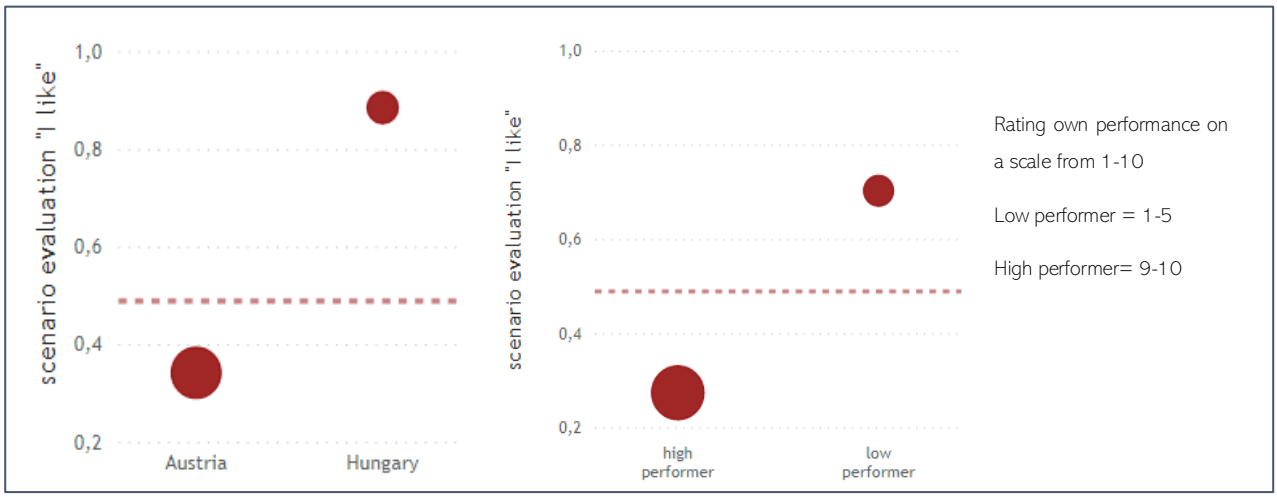


(Source: Microsoft Power BI research results)

There is a significant difference between Austria and Hungary and the agent's performance. Participants located in Hungary agree to the statement above average, with a value of 0,89. Participants located in Austria agree to the statement below average, with a value of 0,34. The average value is 0,49.

Participants who rate themselves as low performer evaluate the scenario above average, with a value of 0,70. High performer rate the scenario below average, with a value of 0,27. The average value is 0,49. The details are shown in the figure below.

Figure 18: Insights for scenario "I like" country and performer



(Source: Microsoft Power BI research results)

4.2.2. Change Estimate Results

After the customer centric scenario was presented to the participant, they are asked to estimate a potential change accompanied by the introduction of this scenario. Therefore, they are asked four questions and need to estimate a change from -100% to +100% in steps of 10%.

Question number one: **"How would your sales performance change with this new concept? (in %)"**

The participants estimate the average change in their own sales performance after implementing a customer centric bonus approach with +18% and a standard deviation of 37,1%.

Figure 19: Descriptive results change estimate own sales performance

(Source: Microsoft Power BI research results)

Question number two: **"How would the overall sales performance of agents in your company change? (in %)"**

The participants estimate the average change in their company's sales performance after implementing a customer centric bonus approach with +8% and a standard deviation of 36,7%.

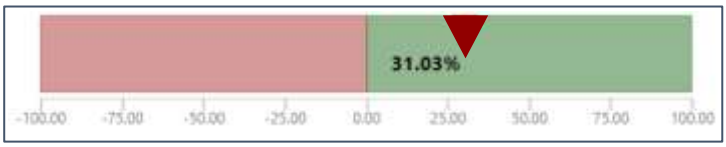
Figure 20: Descriptive results change estimate overall sales performance

(Source: Microsoft Power BI research results)

Question number three: **"How would the satisfaction of your customers change? (in %)"**

The participants estimate the average change in the customer satisfaction after implementing a customer centric bonus approach with +31% and a standard deviation of 34,8%.

Figure 21: Descriptive results change estimate customer satisfaction



(Source: Microsoft Power BI research results)

Question number four: **"How would your bonus or incentive payments develop with the new approach? (in %)"**

The participants estimate the average change in their own bonus payments after implementing a customer centric bonus approach with +22% and a standard deviation of 40,7%.

Figure 22: Descriptive results change estimate bonus

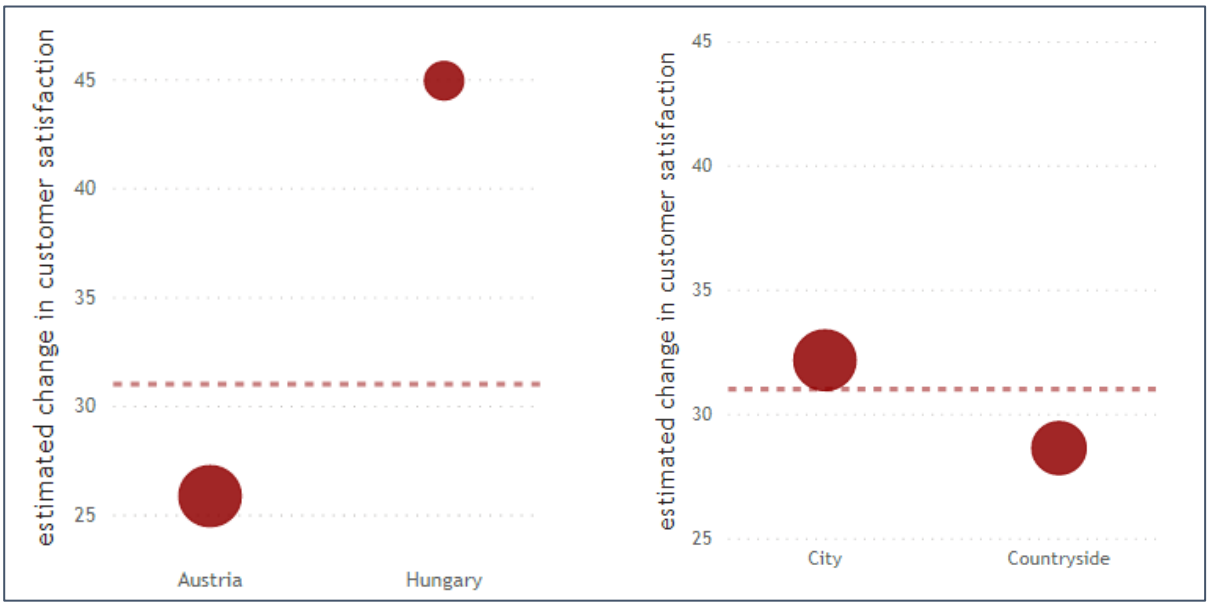
(Source: Microsoft Power BI research results)

Evaluating the "change in customer satisfaction" replies in more detail, three main findings can be seen.

There is a significant difference within the area and the country. Participants located in Hungary estimate the change in customer satisfaction above average, with a value of 44,96%. Participants located in Austria estimate the change in customer satisfaction below average, with a value of 25,89%. The average value is 31,03%.

Participants with their customers in the city estimate the change above average with a value of 32,19%. Participants with their customers in the countryside estimate the change below average with a value of 28,66%. The average value is 31,03%. The details can be seen in the figure below.

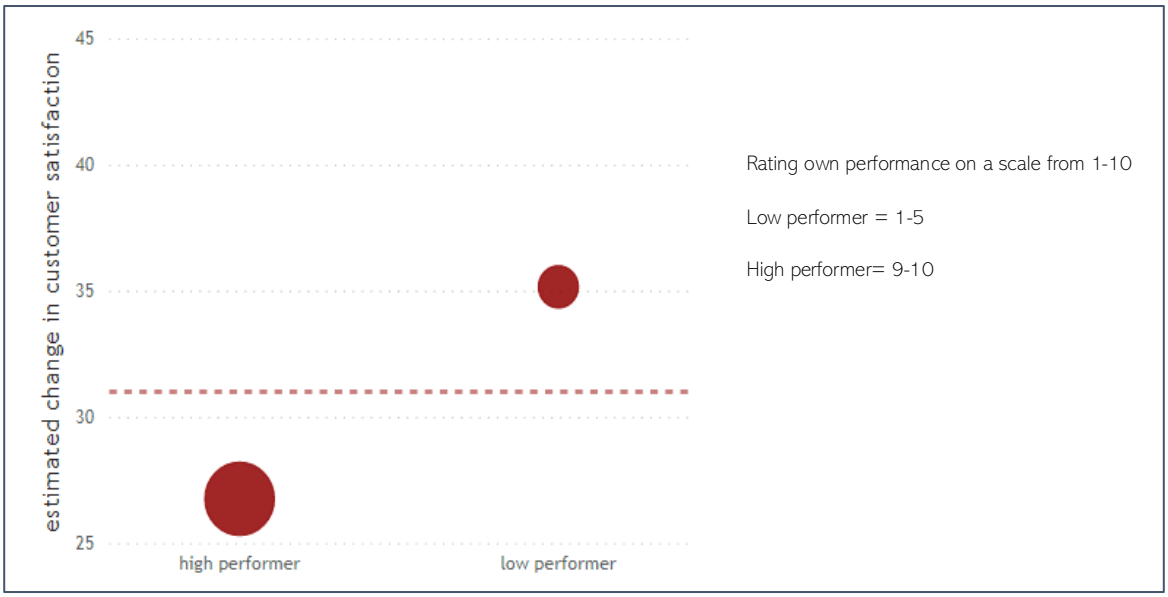
Figure 23: Insights for change estimate country and area



(Source: Microsoft Power BI research results)

Participants who rate themselves as low performers estimate a higher change in customer satisfaction with a value of 35,19%. Participants who rate themselves as high performers estimate a lower change with a value of 26,79%. The average value is 31,03%. Details can be seen below in the figure.

Figure 24: Insights for change estimate performer



(Source: Microsoft Power BI research results)

4.3. Inferential Analysis

This sub-chapter uses inferential statistics to draw conclusions beyond the standard descriptive analysis of the data (Ho, 2017, p. 179). One area of the inferential analysis is the hypothesis testing. T Tests and ANOVA are parametric hypothesis test, which depend on their populations characteristics and the populations needs to be normally distributed and have equal variances. For testing the hypotheses for this research work, a non-parametric inference test needs to be performed, where no assumptions about the population are drawn. The Chi-Square test, as one of the most popular non-parametric tests, is used for this exercise. The data tested can be categorial variables, which include nominal and ordinal scales. The Chi-Square test compares the observed frequency of a category with the expected frequency of a category if the null hypothesis was true (Ho, 2017, pp. 239–240).

4.3.1. Chi-Square Test Goodness-of-Fit

Testing the variables used in this doctoral thesis, the used inferential analysis is the Qui-Square Goodness-of-Fit Test, which estimates how closely an observed distribution matches an expected distribution of a single variable (Ho, 2017, p. 240).

The first variable tested is the variable "prefer customer centric bonus". The null hypothesis states that the responses from the agents answering the survey are equally distributed among the five answers (strongly disagree, disagree, neutral, agree, strongly agree). The null hypothesis states that with 523 responses every answer is expected to have 104,6 responses.

The null hypothesis is rejected if the critical Chi-Square value is higher than the statistical Chi-Square value; reject null hypothesis, if $\chi^2_{stat} > \chi^2_{crit}$ (Ho, 2017, p. 242)

For "prefer customer centric bonus", with 4 degrees of freedom and a significance level of 5%, the $\chi^2_{stat} = 104{,}008$ and the $\chi^2_{crit} = 9{,}488$. Therefore, the null hypothesis gets rejected. This means that there is a difference in the population regarding the preference for the customer centric bonus.

The second variable tested is "like scenario", which asks the agents if they like a customer-centric bonus scheme. The null hypothesis states that the responses from the agents answering

the question are equally distributed among the five answers (strongly disagree, disagree, neutral, agree, strongly agree).

For "like scenario", with 4 degrees of freedom and a significance level of 5%, the $\chi^2_{stat} = 130{,}528$ and the $\chi^2_{crit} = 9{,}488$. Therefore, the null hypothesis gets rejected. This means that there is a difference in the population regarding how the agents like a customer centric bonus.

The third variable tested is "scenario work in my company", which asks the agents if they think a customer-centric bonus scheme can work in their company. The null hypothesis states that the responses from the agents answering the question are equally distributed among the five answers (strongly disagree, disagree, neutral, agree, strongly agree).

For "scenario work in my company", with 4 degrees of freedom and a significance level of 5%, the $\chi^2_{stat} = 121{,}560$ and the $\chi^2_{crit} = 9{,}488$. Therefore, the null hypothesis gets rejected. This means that there is a difference in the population regarding how agents think a customer centric bonus can work in their company.

All three tested variables show that the expected distribution doesn't match the observed distribution. A difference in the population can be observed for all three variables. The detailed calculations are shown in Appendix D.

4.3.2. Chi-Square Test of Independence

The Chi-Square Test of independence estimates whether two random variables are independent or related. Again, the null hypothesis is tested, which states that there is no relationship between the two variables in the population (Ho, 2017, p. 244).

The first pair of variables tested are "prefer customer centric bonus" and "location". The $\chi^2_{stat} = 83{,}150$ and the $\chi^2_{crit} = 31{,}410$, with 20 degrees of freedom and a significance level of 5%. Therefore, the null hypothesis is rejected. This means that there is a relationship between the location of the agent and their preference of a customer-centric bonus concept.

The second pair of variables tested are “prefer customer centric bonus” and “company”. The $\chi^2_{stat} = 30{,}018$ and the $\chi^2_{crit} = 26{,}296$, with 16 degrees of freedom and a significance level of 5%. Therefore, the null hypothesis is rejected. This means that there is a relationship between the company of the agents and their preference of a customer-centric bonus concept.

The third pair of variables tested are “prefer customer centric bonus” and “years”. The $\chi^2_{stat} = 42{,}979$ and the $\chi^2_{crit} = 26{,}296$, with 16 degrees of freedom and a significance level of 5%. Therefore, the null hypothesis is rejected. This means that there is a relationship between the years of experience of the agents and their preference of a customer-centric bonus concept.

The fourth pair of variables tested are “scenario work in my company” and “location”. The $\chi^2_{stat} = 81{,}567$ and the $\chi^2_{crit} = 31{,}410$, with 20 degrees of freedom and a significance level of 5%. Therefore, the null hypothesis is rejected. This means that there is a relationship between the location of the agents and if they think a customer-centric bonus concept can work in their company.

The fifth pair of variables tested are “scenario work in my company” and “company”. The $\chi^2_{stat} = 44{,}776$ and the $\chi^2_{crit} = 26{,}296$, with 16 degrees of freedom and a significance level of 5%. Therefore, the null hypothesis is rejected. This means that there is a relationship between the company of the agents and if they think a customer-centric bonus concept can work in their company.

The sixth pair of variables tested are “scenario work in my company” and “years”. The $\chi^2_{stat} = 27{,}935$ and the $\chi^2_{crit} = 26{,}296$, with 16 degrees of freedom and a significance level of 5%. Therefore, the null hypothesis is rejected. This means that there is a relationship between the years of experience of the agents and if they think a customer-centric bonus concept can work in their company.

The sevenths pair of variables tested are “prefer customer centric bonus” and “bonus received”. The $\chi^2_{stat} = 8{,}389$ and the $\chi^2_{crit} = 9{,}488$, with 4 degrees of freedom and a

significance level of 5%. Therefore, the null hypothesis is accepted. This means that there is no relationship between the fact that agents received a bonus in 2019 and the preference towards a customer-centric bonus concept.

The eights pair of variables tested are “scenario work in my company” and “bonus received”. The $\chi^2_{stat} = 2{,}112$ and the $\chi^2_{crit} = 9{,}488$, with 4 degrees of freedom and a significance level of 5%. Therefore, the null hypothesis is accepted. This means that there is no relationship between the fact that agents received a bonus in 2019 and if they think a customer-centric bonus concept can work in their company.

The ninth pair of variables tested are “like scenario” and “bonus received”. The $\chi^2_{stat} = 3{,}700$ and the $\chi^2_{crit} = 9{,}488$, with 4 degrees of freedom and a significance level of 5%. Therefore, the null hypothesis is accepted. This means that there is no relationship between the fact that agents received a bonus in 2019 and if they like a customer-centric bonus concept.

The preference of the customer-centric bonus, if agents like it and if they think it can work in their company is dependent on the years of experience, the company they are working for and where they are located, but not wherever they received a bonus in the past or not. The detailed calculations are shown in Appendix D.

Table 4: Summary of Chi-Square Test of Independence

Variable 1	Variable 2	Null Hypothesis	Result
prefer customer centric bonus	location	rejected	dependent
prefer customer centric bonus	company	rejected	dependent
prefer customer centric bonus	years	rejected	dependent
scenario work in my company	location	rejected	dependent
scenario work in my company	company	rejected	dependent
scenario work in my company	years	rejected	dependent
prefer customer centric bonus	bonus received	accepted	independent
scenario work in my company	bonus received	accepted	independent
like scenario	bonus received	accepted	independent

Source: Author's results

4.4. Research Hypotheses Results

Based on the profound literature review four research hypotheses were constructed. The following sub-chapters analyze the survey results to answer each research hypothesis and see if it can be confirmed or falsified.

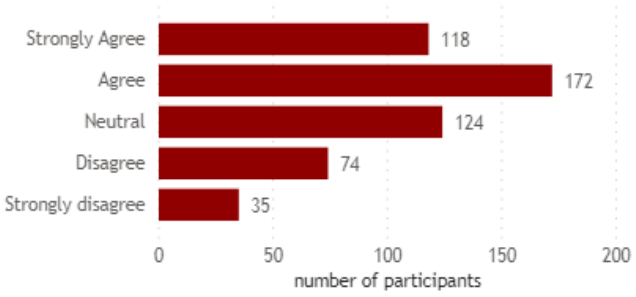
4.4.1. Research Hypothesis 1 Result

H1 states that "Tied agents favor the customer centric remuneration approach over a top-line performance driven remuneration."

The majority, with 55% of all participants, agree to the statement "I prefer a customer centric bonus concept over a top-line performance driven one". Only 21% disagree with the statement and 24% are neutral, which can be seen in the figure below. The average value is 0,50 (where -2 stands for "strongly disagree" and 2 stands for "strongly agree"), which is considered as a positive assessment. Therefore, H1 can be confirmed.

Figure 25: Result scenario "I prefer"

scenario "I prefer"	number of participants	% of participants
Strongly Agree	118	22,56%
Agree	172	32,89%
Neutral	124	23,71%
Disagree	74	14,15%
Strongly disagree	35	6,69%
Total	523	100,00%



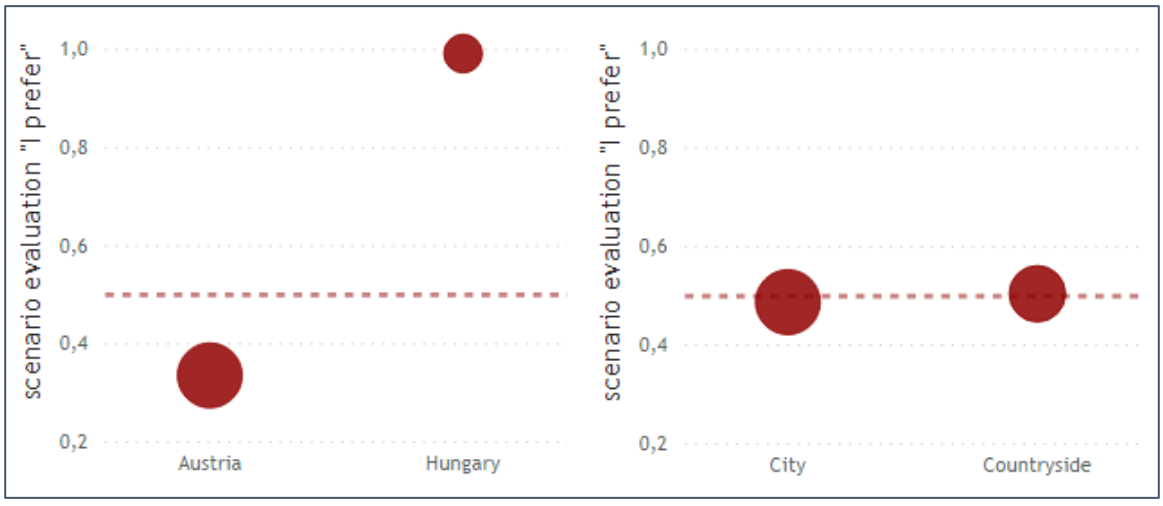
(Source: Microsoft Power BI research results)

Looking into the details of this statement, some further results can be seen.

There is a significant difference how agents from Austria and agents from Hungary rate the statement, even though both countries have a positive average value. Hungary prefers a customer centric bonus concept with an average value of 0,99. Austria prefers a customer centric bonus concept with an average value of 0,34. The overall average is 0,50, as shown in the figure below. The dependence of the preference towards a customer centric bonus and the location of the agent is confirmed by the Chi-Square test and shows a relationship of both variables.

There is no significant difference in the preference of the customer centric bonus concept between agents with their customers in the city, where the average value is 0,49, and the countryside, where the average value is 0,50, as shown in the figure below.

Figure 26: Result scenario "I prefer" country and area

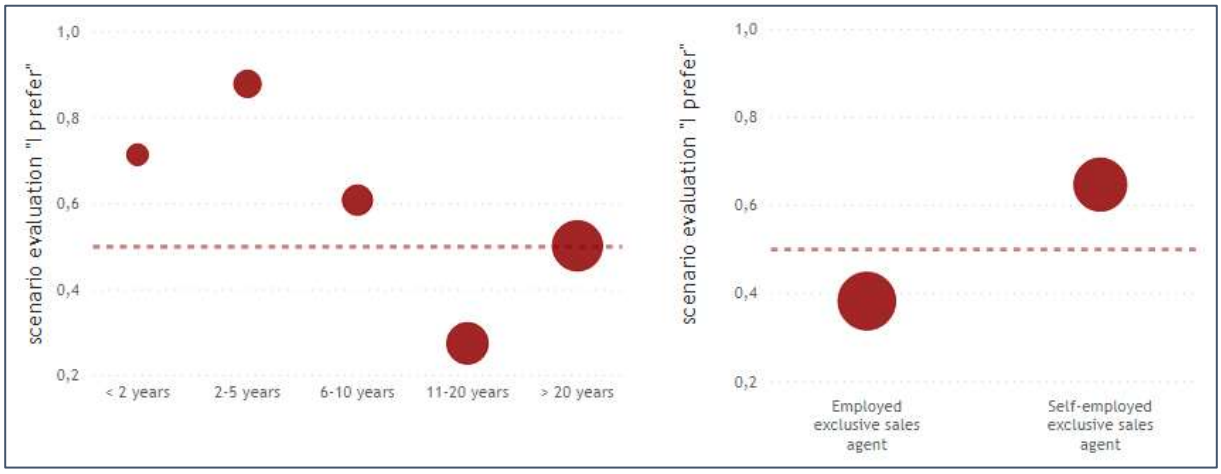


(Source: Microsoft Power BI research results)

Evaluating the differences for agents by years of experience in insurance sales, a clear tendency can be seen. Agents with less than 10 years of experience prefer the customer centric bonus concept above average. The agents with 2-5 years show an average value of 0,88. The agents with more than 11 years in insurance sales rate the scenario below or at average. Agents with 11-20 years of experience show an average value of 0,28. Still, all groups show a positive average value, which means that they prefer the customer centric bonus approach over a top-line performance driven remuneration. The dependence of the preference towards a customer centric bonus and the years of experience is confirmed by the Chi-Square test and shows a relationship of both variables.

Employed sales agents show a lower average value, with 0,38, than self-employed agents, with 0,65, as shown in the figure below.

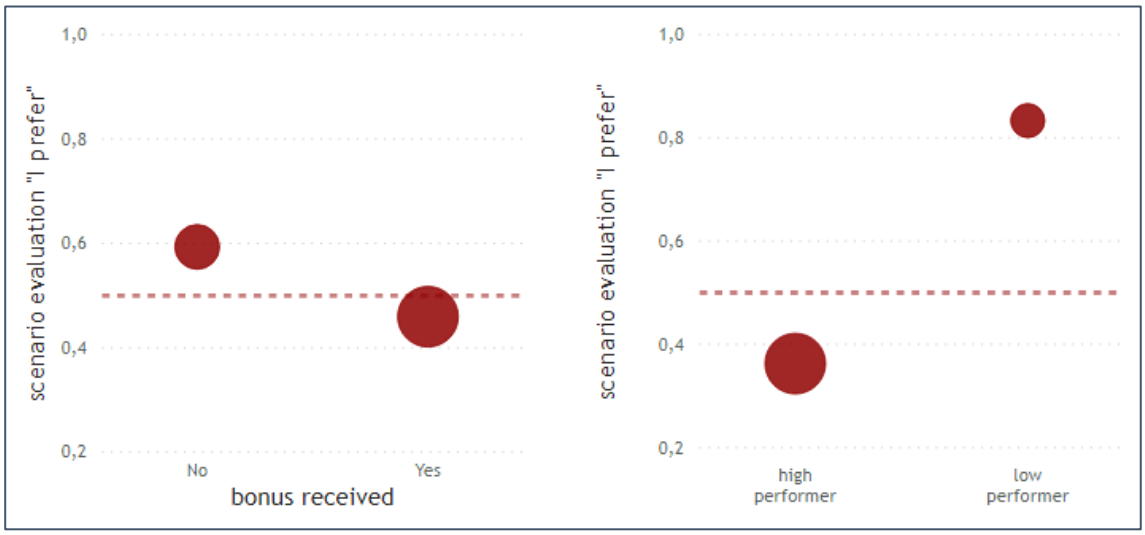
Figure 27: Result scenario "I prefer" experience and role



(Source: Microsoft Power BI research results)

Agents which rate themselves as low performers prefer the customer centric bonus model above average, with a value of 0,83. Generally, it can be stated that agents who did not receive a bonus in 2019 will most likely be low performers. This rating of agents who did not receive a bonus is also above average, with a value of 0,59, which confirms the low performers result. High performers prefer the customer centric approach below average, with a value of 0,36. The value of the agents who received a bonus, which is 0,46, confirms the result, as seen in the figure below. The Chi-Square test shows that the variables "prefer customer centric bonus" and "bonus received" are independent from each other. This means that there is no relationship and the result from the descriptive analysis needs to be falsified. Taking the degrees of freedom and the significance level into account those descriptive findings are expected in the population and don't show a significant finding.

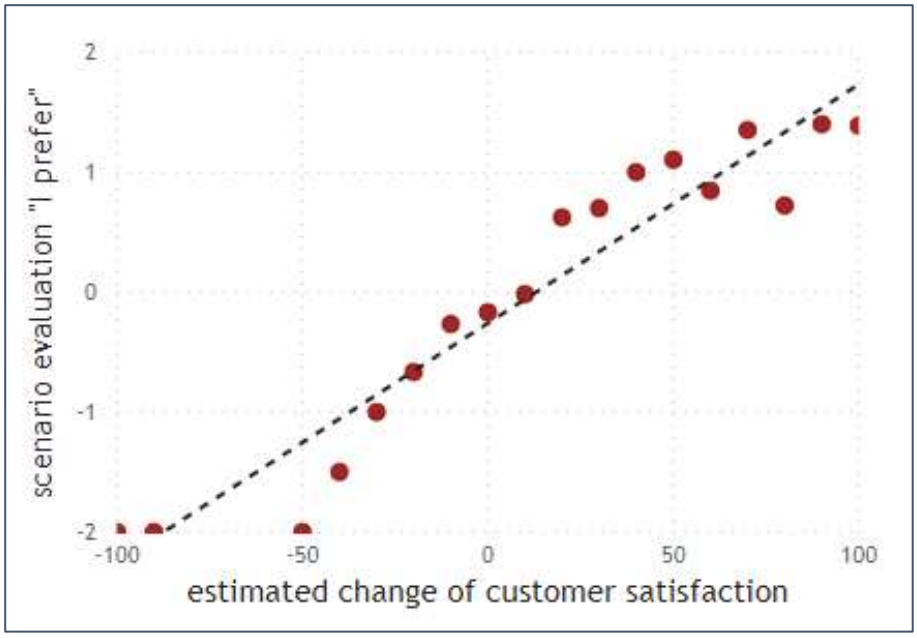
Figure 28: Result scenario "I prefer" bonus and performer



(Source: Microsoft Power BI research results)

A strong correlation between the scenario evaluation of the statement "I prefer a customer centric bonus concept over a top-line performance driven one" and the estimated change of customer satisfaction can be seen. This means that agents who do not prefer the customer centric approach estimate a negative change in customer satisfaction, whereas agents who prefer the customer centric approach estimate a positive change in customer satisfaction, as shown in the figure below.

Figure 29: Result scenario "I prefer" correlation with change in customer satisfaction



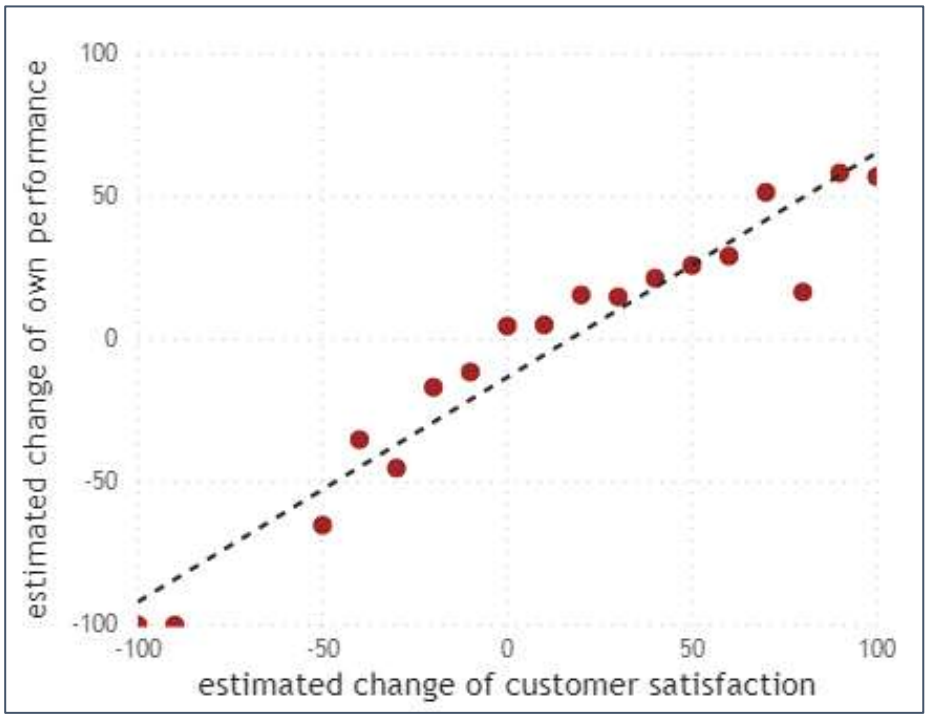
(Source: Microsoft Power BI research results)

4.4.2. Research Hypothesis 2 Result

H2 states that "Tied agents estimate a positive change in their own sales performance (= sum of premium sold) and simultaneously a positive change in the customer satisfaction, when introducing a customer centric remuneration approach."

The figure below shows the significant positive correlation of the estimated change in the own sales performance with the estimated change of the customer satisfaction, when introducing a customer centric remuneration approach.

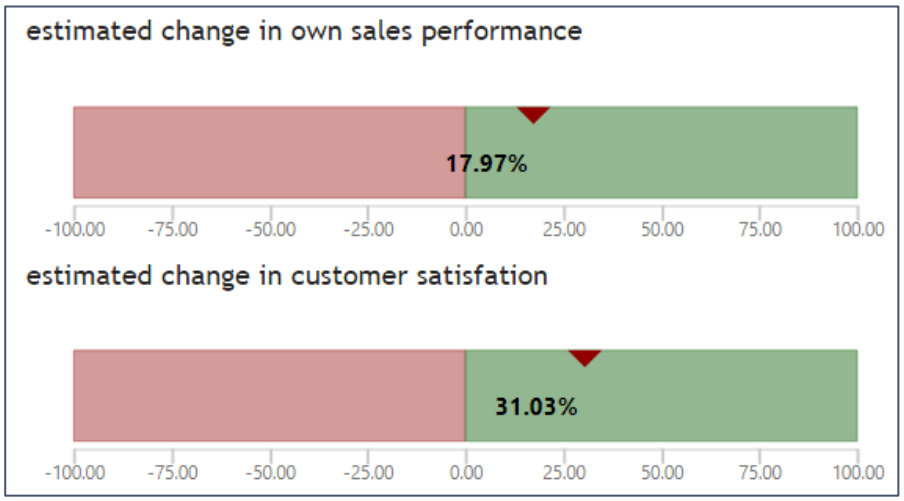
Figure 30: Result estimated change correlation sales performance and customer satisfaction



(Source: Microsoft Power BI research results)

The participants' estimation of the potential change from -100% to +100% in steps of 10% is shown in the figure below. On average the participants estimate the change in their own sales performance after implementing a customer centric bonus approach with +18%. The average change of the customer satisfaction is estimated with +31%. Therefore, H2 can be confirmed.

Figure 31: Result estimated change own performance and customer satisfaction

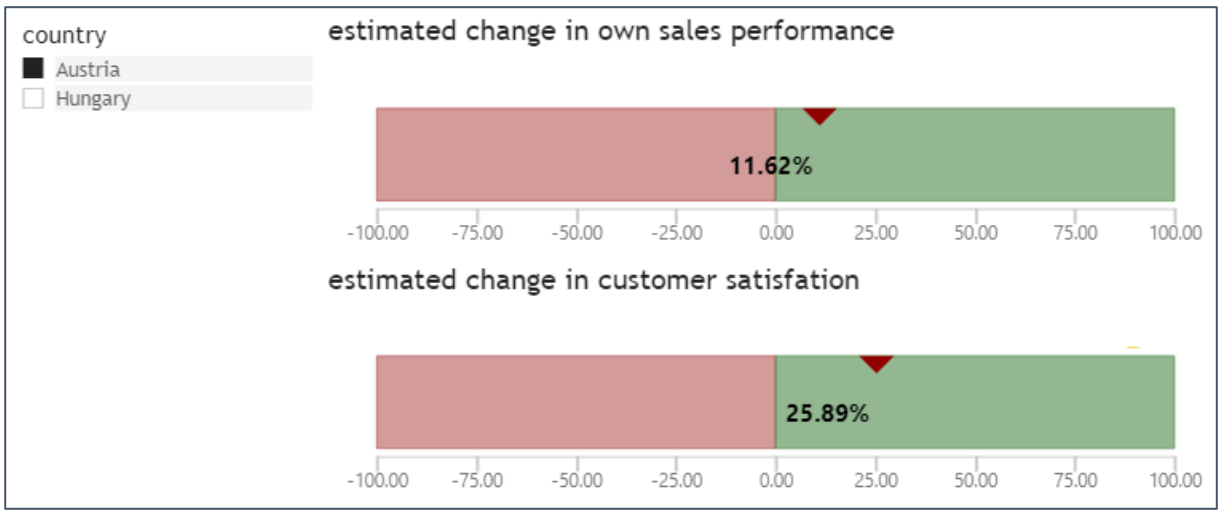


(Source: Microsoft Power BI research results)

Looking into the details of this result, some further insights can be seen.

There is a significant difference in the estimated change of participants from Hungary and from Austria. Participants from Austria estimate a positive change of their own sale performance, with +12%, and the customer satisfaction, with +26%, as seen in the figure below. The average estimate from Austria compared to Hungary is significant lower.

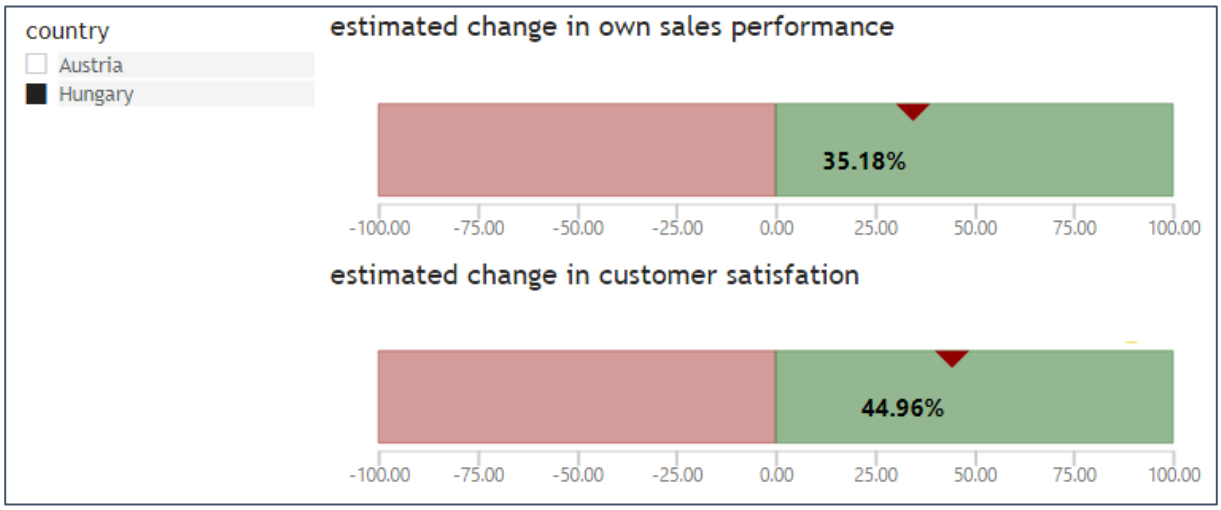
Figure 32: Result estimated change Austria own performance and customer satisfaction



(Source: Microsoft Power BI research results)

Participants from Hungary estimate a positive change of their own sale performance, with +35%, and the customer satisfaction, with +45%, as seen in the figure below.

Figure 33: Result estimated change Hungary own performance and customer satisfaction



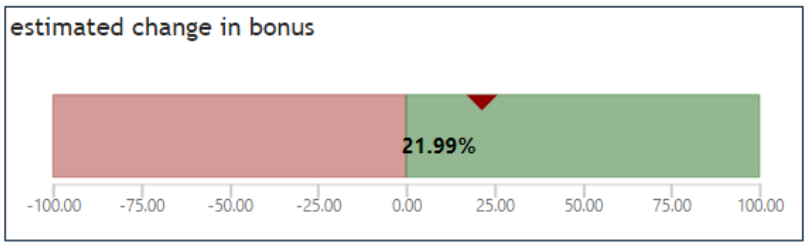
(Source: Microsoft Power BI research results)

4.4.3. Research Hypothesis 3 Result

H3 state that "Tied agents, who identify themselves as high performer, estimate a positive change in bonus payments, when introducing a customer centric remuneration approach."

On average the participants estimate a change in bonus or incentive payments introducing the new customer centric approach of +22%, as shown in the figure below.

Figure 34: Result estimated change in bonus

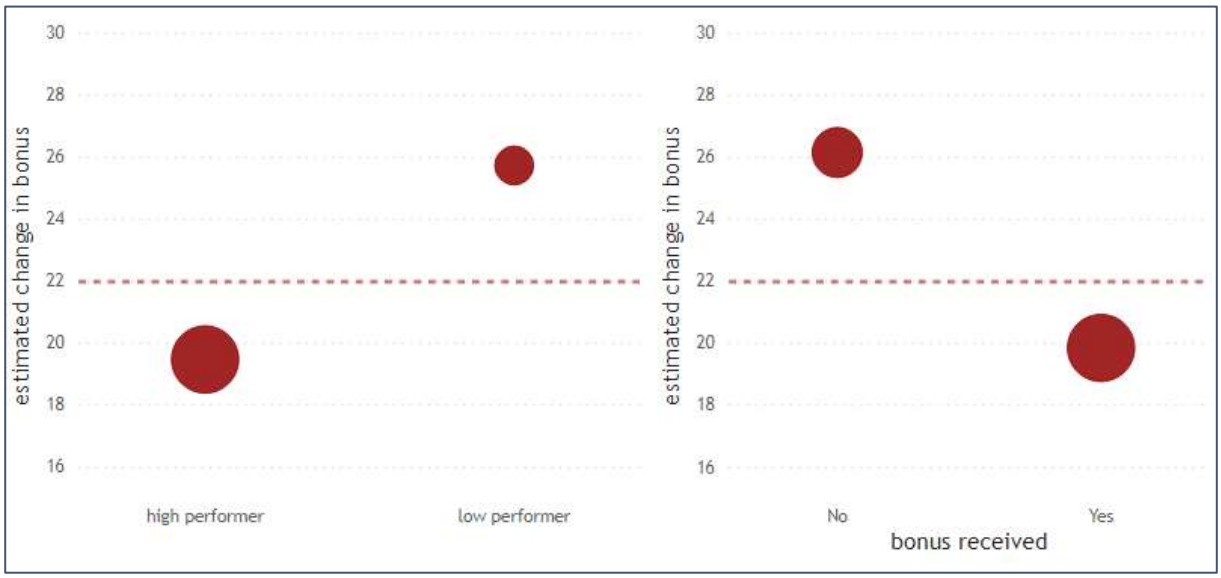


(Source: Microsoft Power BI research results)

Differentiating the results for low and high performing participants, the following insights can be drawn. Participants, who rate themselves as high performers estimate a positive change in bonus with +19%, but still below average. The same applies for participants, who received a bonus in 2019. They estimate a positive change in bonus with +20%, but below average as well. Participants, who rate themselves as low performers estimate a change in bonus with +26%. The same applies for

participants, who did not receive a bonus in 2019. They estimate a change in bonus with +26%, as shown in the figure below. Therefore, H3 can be confirmed but needs to be specified. The results show that agents, who identify themselves as low performer, estimate an even more positive change in bonus payments, than high performing agents.

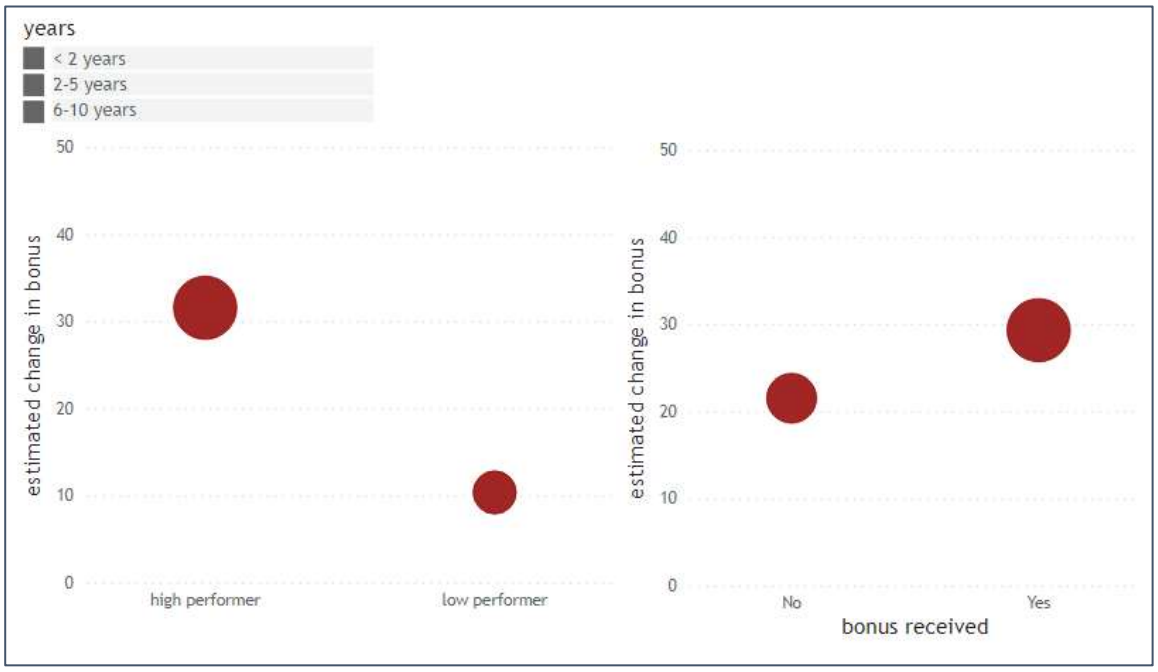
Figure 35: Result estimated change in bonus performer and bonus



(Source: Microsoft Power BI research results)

The fact that low performers estimate the change in bonus higher that high performers is true for various analysis, such as country, area, and role of the participants. Only for the years of experience, there is a different result. High performing participants and participants, who receive a bonus in 2019 with less than 10 years of estimate the change in bonus higher than low performers, as shown in the figure below.

Figure 36: Result estimated change in bonus performer and bonus based on years



(Source: Microsoft Power BI research results)

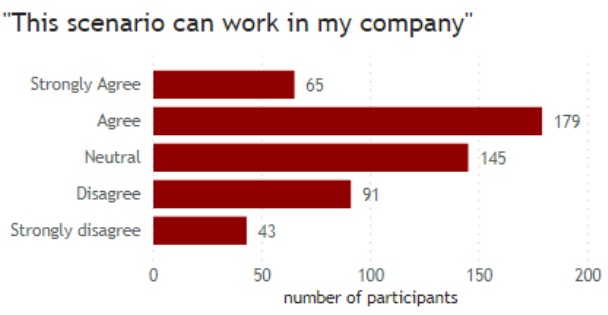
4.4.4. Hypothesis 4 Result

H4 state that "Austria's tied agents have a higher acceptance of a customer centric remuneration approach than Hungary's tied agents."

47% of all participants think that the customer centric approach can work in their company whereas only 26% do not, which can be seen in the figure below. The average value is 0,25 (where -2 stands for "strongly disagree" and 2 stands for "strongly agree"), which is a positive evaluation.

Figure 37: Result scenario evaluation "can work"

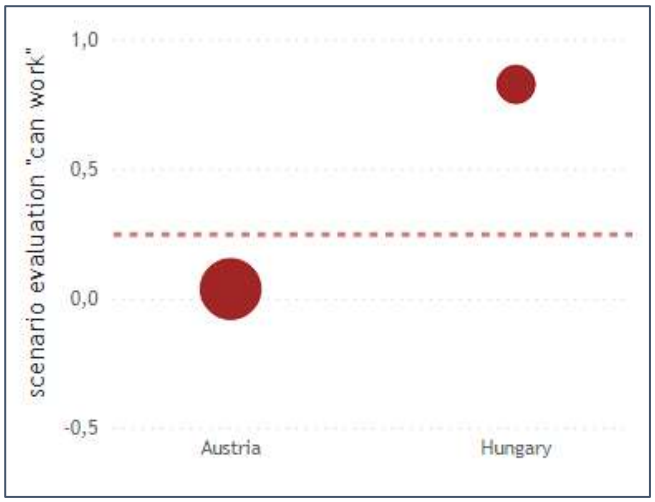
scenario "can work"	number of participants	% of participants
Strongly Agree	65	12,43%
Agree	179	34,23%
Neutral	145	27,72%
Disagree	91	17,40%
Strongly disagree	43	8,22%
Total	**523**	**100,00%**



(Source: Microsoft Power BI research results)

Participants from Hungary evaluate that the scenario “can work” above average, with a value of 0,83. Participants from Austria achieve a value of 0,04, which is a neutral evaluation, as shown in the figure below. Therefore, H4 needs to be falsified. Austria’s tied agents have no acceptance (a neutral opinion) of a customer centric remuneration approach. Hungary’s tied agents have a positive acceptance of this approach and think that the new customer centric model can work in their company. The dependence of the variables “scenario work in my company” and the location of the agent is confirmed by the Chi-Square test and shows a relationship of both variables.

Figure 38: Result scenario evaluation "can work" country



(Source: Microsoft Power BI research results)

4.4.5. Summary of Hypotheses Results

The table below summarizes the hypotheses results. Three hypotheses are confirmed, and one is falsified.

Table 5: Summary of Hypotheses Results

Hypothesis	Result
H1: Tied agents favor the customer centric remuneration approach over top-line performance driven remuneration.	confirmed
H2: Tied agents estimate a positive change in their own sales performance (= sum of premium sold) and simultaneously a positive change in the customer satisfaction, when introducing a customer centric remuneration approach.	confirmed
H3: Tied agents, who identify themselves as high performer, estimate a positive change in bonus payments, when introducing a customer centric remuneration approach.	confirmed but specified
H4: Austria's tied agents have a higher acceptance of a customer centric remuneration approach than Hungary's tied agents.	falsified

(Source: results from research work)

IV. CONCLUSION AND DISCUSSION

Part II. of this dissertation offers a profound theoretical framework showing the state-of-the-art research and providing the analysis of existing concepts within the topic of insurance regulation, remuneration, incentivization and the conflict of interests in the insurance context. This literature review builds the foundation for the empirical study performed, which is shown in part III. The methodological part of this dissertation highlights the purpose of the research work, demonstrated the performed study and showing the research results. The following concluding part focuses on the discussion and interpretation of the survey findings in combination with the literature research conducted. In addition to summarizing the findings of this research work, the limitations and areas for further research are shown.

1. Discussion

The big question of this research work is, if customer interest can be the underlying indicator to eliminate conflict of interest. This discussion started looking at the IDD. As already stated heavily in the theoretical framework chapter, the IDD lays the foundation for true customer centric insurance distribution. It not only lays the foundation but demands the European insurance sector to make it a priority. Remunerating the sales agents should not in any way create a conflict of interest. Insurance companies need to make sure that they act in the best interest of their customers. In particular, an insurance distributor shall not create remuneration systems and sales targets that could provide an incentive to recommend a particular insurance product to a customer when the insurance distributor could offer a different insurance product which would better meet the customer's needs (Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016b). This regulatory framework was officially implemented into national law in 2018. But how does the reality look like and what findings can be seen from the research work?

523 tied agents from Austria and Hungary filled out which KPIs are relevant to receive a bonus or incentive payment. The top three KPIs within the ranking are "sum of premium sold", "number of policies sold" and "specific lines of business". All three KPIs are top-line performance driven KPIs and together cover 66% of all bonus KPIs. This means that two-thirds of all bonuses motivate the tied agents to sell a higher sum of premium, sell more policies and sell a specific type of product. The bottom three KPIs within the ranking, of potential 10 different KPIs to choose from, are "customer

satisfaction", "number of customers", "customer appointments per week". Those three KPIs together cover 10% of all bonuses and are identified as customer oriented KPIs. Only every tenth bonus agreement motivates the tied agents to visit their customers regularly, increases the number of customer and satisfies their customers' needs. Reading the IDD requirements and analyzing the answers from 523 agents, a gap can be identified. The current bonus schemes are still designed focusing on top-line performance and de-prioritizing the customer interest.

As described in the theoretical framework chapter, not only the European law emphasizes the change of the remuneration system, also acknowledged researchers in the field point this out for more than 30 years. Howe, Hoffmann and Hardigree are experts in this field of marketing, sales and customer psychology. Howe et al. (1994) state in their work about ethical and customer-oriented service provider behavior, that agents with a higher customer orientation and a lower sales orientation have higher ethical standards in their sales practices. If commission compensation encourages a higher sales orientation, then the link to unethical sales practices could be drawn (Howe et al., 1994, p. 505).

The research work for this dissertation reveals that agents who rate themselves as low performers and agents who did not receive a bonus in 2019 prefer a customer centric bonus model significantly more than agents who rate themselves as high performers and agents who received a bonus in 2019. So, agents with a good sales result do not prefer customer orientation as much as agents with bad sales results. This finding shows the divergence between sales and customer orientation described by Howe et al. (1994).

Two additional experts in the field of social relationships and insurance explore the connection of insurance intermediaries' remuneration and behavior. Cupach and Carson (2002) investigate that the commission compensation system aligns the intermediary's interest more closely with the interest of the insurance company rather than the customer. The behavior of the intermediary will therefore favor the interest of the insurer over the interest of the customer. The agent will sell products that bring the maximum benefit to the insurer rather than to the customer (Cupach & Carson, 2002, p. 169). The fact that agents focus on the biggest benefit for themselves and therefore favor the interest of the insurer, can also be seen in the result from the agents' study.

When introducing a customer-oriented bonus model, agents who rate themselves as high performers estimate a lower change in their own bonus payment than agents who rate themselves as low performers. The same applies for agents, who received a bonus payment in 2019. Those group of

agents estimate a lower change in their own bonus payment, when a customer-oriented bonus payment is introduced. This means, that agents who are strong performers on sales results see a lower benefit in introducing a customer centric approach. More high performing agents want to keep the top-line performance driven bonus approach. This result confirms the statements from Cupach and Carson (2002).

The insurance distribution situation faces a complex agency principal dilemma, where the principal (insurance company) hires the agent (intermediary) to act on behalf of the principal but simultaneously acts in the interest of a third party (customer). Ma, Pope and Xie are experts in the Insurance and Financial Services sector exploring insurance intermediaries, commissions, and the insurer performance. Ma et al. (2014) identify the principal agency theory in the insurance context as a complex dilemma where the goals of each counterpart are not aligned (Ma et al., 2014, p. 63). Cummins and Doherty bring up a suggestion for solving this problem. The attempted solution is designing an incentive-based compensation model that is fully aligned with the interests of the principle and therefore also the interests of the agent (Cummins & Doherty, 2006, p. 383).

The purpose of this empirical research is to identify if a remuneration system can align the interest of the intermediary, the customer, and the insurance company and therefore eliminate the conflict of interest. The theoretical scenario is that customer satisfaction can be the only underlying KPI for an intermediary to receive a bonus. All three involved parties in the complex principal agent situation have the same goal. The customer wants to receive the best guidance and the most suitable product (which will be shown in a high customer satisfaction). The intermediary wants to do a good job and receive a bonus (which can be achieved by increasing the customer satisfaction). The company wants to make sustainable profit and have loyal customers (which can be potentially achieved by making the customer satisfaction the central item for their intermediaries).

In the survey the agents were asked to evaluate a scenario, where the one and only underlying KPI to reach a bonus will be customer satisfaction. The entire bonus budget will be distributed among the agents solely based on the satisfaction of their customer. As an example, the classic 5-star rating (as known from hotel bookings, restaurant visits or Amazon products shopping) is introduced. After the customer centric scenario was presented to the agents, they are asked to estimate a potential change after implementing such an approach.

The participants estimate the average change in their own sales performance after implementing a customer centric bonus approach with +18%. This means that the goal of the insurance company is

achieves by increasing the profits. Furthermore, the participants estimate the average change in the customer satisfaction after implementing a customer centric bonus approach with +31%. This means that the goal of the customer is also achieved by increasing their own satisfaction. On a final note, the participants estimate the average change in their own bonus payments after implementing a customer centric bonus approach with +22%. This means that the goal of the intermediaries is also met by increasing their bonus. The results show that the theory from Ma et al. (2014) and Cummins and Doherty (2006) can be confirmed. Aligning the goal reduces the conflict of interest and simultaneously increasing the performance of all involved parties.

Implementing the IDD, member states have a lot of flexibility translating the requirements into national law. It is permitted to impose stricter rules and requirements in certain areas (Veris & Goddet, 2018, p. 37). The implementation into national law and being IDD compliant, happened in a diverse speed and with a different strictness in the various member states (Veris & Goddet, 2018, p. 34). Hungary implemented the IDD in a speedy manner and already delivered for the initial transposition date in February 2018. Austria took advantage of the postponed transposition date in July 2018 (EUR-Lex, 2020a). The Austrian Authorities decided to apply even stricter rules for the remuneration of intermediaries. It is stated that the compensation of an intermediary should not in any way collide with the interest of the customer (Rechtsinformationssystem des Bundes, 2018). Hungary on the other side does not apply stricter rules or emphasize the intermediaries' remuneration in a special way. Based on the different implementation approach in both countries, the assumption was made that there is a difference in the results from Austrian and Hungarian agents. Due to the stricter rules for the Austrian insurance market, the assumption is that Austrian agents think more positive about a customer centric remuneration model and estimate a higher positive development. The research results show that the opposite is the case.

Asking the agents to rate the customer centric bonus scenario, they need to evaluate the statement "I like the scenario". Participants located in Hungary rate above average and participants located in Austria below average. Evaluating if this scenario could work in the respective insurance company, agents from Hungary again rated very positive, whereas agents from Austria only rated neutral. Austria's tied agents have no acceptance (a neutral opinion) of a customer centric remuneration approach. Hungary's tied agents have a positive acceptance of this approach and think that the new customer centric model can work in their company. When asking the participants how the customer satisfaction would change, when implementing such a customer-oriented remuneration concept, Hungary estimated a change above average and Austria below average. The difference between the

estimated of the two countries is big with 19%. Therefore, the assumption can be verified that a significant difference exists. Even tough, Austria implemented the IDD in a stricter manner focusing on the remuneration of intermediaries to protect the interest of the customer, Austrian agents see a potential customer centric bonus model far more negative than the Hungarian agents.

2. Overall Conclusion

This research work is based on a theoretical framework looking at the reasons for regulating the insurance market, the latest insurance distribution directive, remuneration models and incentivization for insurance intermediaries and the connected theory of principal agent dilemma. Having the guidelines of the IDD and the scientific literature in mind, there is a huge potential to challenge the current remuneration approach. Insurance agents in Austria and Hungary have commission schemes and bonus agreements based on sales targets and sales plans. These targets and plans are based on performance KPIs such as the amount of premium, or the number of policies sold. Different products have different commission rates and contribute a different portion to a yearly bonus. These KPIs are chosen by the insurance company to serve its own interest of maximizing profit. As mentioned in the literature review, it is assumed that agents are self-interested and act in their own benefit. Therefore, agents will sell the products that maximize their own commission and bonus earned. The insurance company supports such a remuneration system because their own interest is to sell as much as possible. This situation describes the classic principal agent theory, ignoring the interest of the customer. Scientific research tends to blame the remuneration system itself for this unbalanced situation, where agents act in their own interest and not on behalf of the customer. When the guidelines from the IDD are taken into consideration, the customer interest needs to be put in the center to avoid the conflict of interest in the insurance distribution process.

The assumption made in this dissertation is that adapting the remuneration system is not necessary, when the underlying performance KPIs are changed. The idea is that the customer interest and customer satisfaction are the required KPIs to reach a bonus and receive extra commission. Therefore, a customer centric sales approach would simultaneously increase the profit of the insurance company. The questions that need to be answered are if this scenario could work if agents perceive a change in their performance and how they assess the development of the company's sales results and customer satisfaction with such a concept.

The following research questions are answered in this empirical research:

- Can the conflict of interest within the insurance distribution process be eliminated, changing the underlying KPI from a top-line performance approach (like sum of premium or number of policies) to a customer centric approach (like customer satisfaction)?
- How will agents accept and appreciate a customer centric remuneration approach?
- How will agents estimate their own sales performance, the companies' sales performance, and the customers satisfaction introducing a customer centric remuneration approach?
- How will the results differentiate between Austria and Hungary, rural and city, top and low performing agents?

The questions above are answered by performing a survey with exclusive sales agents from the top insurance companies in Austria and Hungary. A link to the online questionnaire, consisting of 17 questions, is shared via email. The survey is available in German, English, and Hungarian language. The study asks exclusive sales agents for their opinion and estimation of a customer centric bonus concept, where the only underlying KPI to receive a bonus is the customer satisfaction (e.g., 5-star rating). In total 523 valid replies come from participants in the period from 2nd of November 2020 to 13th of January 2021.

The following four hypotheses are stated:

H1: Tied agents favor the customer centric remuneration approach over top-line performance driven remuneration.

The majority, with 55% of all participants, agreed to the statement "I prefer a customer centric bonus concept over a top-line performance driven one". Only 21% disagree with the statements and 24% are neutral, which can be seen in the figure below. The average value is a positive assessment. Therefore, H1 can be confirmed.

H2: Tied agents estimate a positive change in their own sales performance (= sum of premium sold) and simultaneously a positive change in the customer satisfaction, when introducing a customer centric remuneration approach.

The results show a significant positive correlation of the estimated change in the own sales performance and the estimated change of the customer satisfaction, when introducing a customer centric remuneration approach. On average the participants estimate the change in their own sales performance after implementing a customer centric bonus approach with +18%. The average change of the customer satisfaction is estimated with +31%. Therefore, H2 can be confirmed.

H3: Tied agents, who identify themselves as high performer, estimate a positive change in bonus payments, when introducing a customer centric remuneration approach.

On average the participants estimate a change in bonus or incentive payments with the new customer centric approach of +22%. Participants, who rate themselves as high performers estimate a positive change in bonus with +19%, but still below average. Participants, who rate themselves as low performers estimate a change in bonus with +26%. Therefore, H3 can be confirmed but needs to be specified. The results show that agents, who identify themselves as low performers, estimate an even more positive change in bonus payments, than high performing agents.

H4: Austria's tied agents have a higher acceptance of a customer centric remuneration approach than Hungary's tied agents.

Participants from Hungary evaluate that the scenario can work above average. Participants from Austria achieve a neutral value. Therefore, H4 needs to be falsified. Austria's tied agents have no acceptance (a neutral opinion) of a customer centric remuneration approach. Hungary's tied agents have a positive acceptance of this approach and think that the new customer centric model can work in their company.

The results from the empirical study confirm that the conflict of interest within the insurance distribution process could be eliminated or at least reduced, changing the underlying KPI from a top-line performance approach (like sum of premium or number of policies) to a customer centric approach (like customer satisfaction). Tied Agents from Austria and Hungary estimate a positive change in sales results and simultaneously a positive change in customer satisfaction, when introducing a customer centric remuneration model.

The research objectives are met. The research identified the underlying KPIs and reveals the focus on top-line performance driven KPIs such as “sum of premium sold”, “number of policies sold”, and “specific lines of business”. Even after implementing the IDD, which strengthens the customer protection and puts the customer interest in the center, those KPIs remain the most important contributors for a bonus. Customer-oriented KPIs, like “customer satisfaction”, “number of customers”, and “customer appointments per week” are part of many bonus agreements, but only play a very minor role for achieving a bonus.

The second research objective of examining the insurance agents’ attitude toward a customer-centric remuneration approach, is also met. The research results reveal how agents in Hungary and Austria, with customers in the City and in the Countryside, high-performing and low-performing, dependent on years of experience, think about a customer-oriented bonus concept. The results show how they estimate changes of sales performance and customer satisfaction and give a valuable transparency how to reduce the conflict of interest in the insurance distribution context.

In practice, the research results can help insurance companies shaping high performing bonus agreements, which simultaneously reduce the conflict of interest and increase the customer satisfaction. The findings from this research work can be used in addition to the legal framework and suggestions from the IDD. Insurance companies can include customer-centric KPIs in their annual bonus agreements for agents as the main KPIs. The customer orientation will increase the customer satisfaction and ideally also increase the sales performance. Therefore, the conflict of interest in the insurance distribution context can be reduced.

3. Limitations and Further Research

For this research work, the content and context were chosen deliberately. The areas for further research are highlighted in the sections below.

3.1. Stakeholders in insurance distribution

The empirical research only asked for the opinion and the estimation of tied agents. As the principal agent theory within the insurance context states, intermediaries are only one of three stakeholders involved in the distribution process. The view of the customers and the insurance company is missing in this research work. In addition, to the survey performed with agents, the experts and managers in

the sales departments being responsible for creating the remuneration models could be interviewed. The experience and expectation from customers' side can also be a valuable extension of this research.

3.2. Selected countries

The IDD is a European insurance directive and therefore two different countries within the EU were selected for the purpose of this empirical study. Even though the results from both countries show significant differences, adding other European countries to the list could be interesting. Austria and Hungary are very similar looking at the history, the culture, and the insurance sector with a strong focus on the agent channel. Further research could focus on southern and northern EU countries.

3.3. Type of intermediaries

The focus of this research work lies on dependent intermediaries with a strong bond to their insurer. Employed single-tied agent and non-employed single-tied agents are both categories of sales agents selling exclusively for their insurer. An additional future research could also focus on the second classic remuneration channel. Insurance brokers are independent of an insurance company and represent the customer and not the insurer. Past research shows that the conflict of interest is not as challenging for brokers as for agents. Nevertheless, looking at a second distribution channel can bring new results or confirm the existing ones.

As a distribution channel which is seen as quite new but becoming more and more important nowadays, the direct business can be analyzed. Looking at the direct channel can also reveal interesting results, when intermediaries are excluded from the distribution process.

3.4. Size of insurance company

For this research work agents from the top 5 insurance companies in the respective markets were approached. Agents working in companies covering two-thirds of the Austrian and Hungarian marked participated in the survey. This means that only agents working for big insurance companies shared their view. Further research can focus on smaller insurance companies, as they might have different remuneration models.

Reference List

Anderhub, V., Gächter, S., & Königstein, M. (2002). Efficient Contracting and Fair Play in a Simple Principal-Agent Experiment. *Experimental Economics*, *5*(1), 5–27.

Baker, T. (1996). On the Genealogy of Moral Hazard. *Texas Law Review*. (75), 237–292.

Borio, C. E. V. (Ed.) (2004). *Market discipline across countries and industries*. Cambridge, MA: MIT Press.

Butsic, R. P. (1994). Solvency Measurement for Property-Liability Risk-Based Capital Applications. *The Journal of Risk and Insurance*, *61*(4), 656–690.

Cohen, A., & Siegelman, P. (2010). Testing for Adverse Selection in Insurance Markets. *Journal of Risk and Insurance*, *77*(1), 39–84.

Cummins, J. D. (Ed.) (2002). *Deregulating property-liability insurance: Restoring competition and increasing market efficiency*. Washington, D.C: AEI-Brookings Joint Center for Regulatory Studies.

Cummins, J. D., & Doherty, N. A. (2006). The Economics of Insurance Intermediaries. *J Risk & Insurance (Journal of Risk and Insurance)*, *73*(3), 359–396.

Cummins, J. D., Rubio-Misas, M., & Vencappa, D. (2017). Competition, efficiency and soundness in European life insurance markets. *Journal of Financial Stability*, *28*, 66–78.

Cupach, W. R., & Carson, J. M. (2002). The Influence of Compensation on Product Recommendations Made by Insurance Agents. *Journal of Business Ethics*, *40*(2), 167–176.

Das, U. S., Davies, N., & Podpiera, R. (2003). *Insurance and Issues in Financial Soundness*. *IMF Working Papers: Working Paper No. 03/138*. Washington, D.C: International Monetary Fund.

Detragiache, E., & Demirgüc-Kunt, A. (1997). *The determinants of banking crises: evidence from developing and developed countries.*

Dewatripont, M., & Tirole, J. (1999). *The prudential regulation of banks* (2. print). *The Walras-Pareto lectures: Vol. 1*. Cambridge, Mass.: MIT Press.

Doff, R. (2008). A Critical Analysis of the Solvency II Proposals. *The Geneva Papers on Risk and Insurance - Issues and Practice*, *33*(2), 193–206.

Doff, R. (2016). The Final Solvency II Framework: Will It Be Effective? *The Geneva Papers on Risk and Insurance - Issues and Practice*, *41*(4), 587–607.

Eisenkopf, G., & Teyssier, S. (2016). Principal-agent and Peer Relationships in Tournaments. *Managerial and decision economics*, *37*(2), 127–139.

Eling, M., Schmeiser, H., & Schmit, J. T. (2007). The Solvency II process: Overview and critical analysis. *Risk management and insurance review*. (10 (1)), 69–85.

EUR-Lex (2020a). Document 32016L0097: National Transposition. Retrieved from https://eur-lex.europa.eu/content/welcome/about.html

EUR-Lex (2020b). Procedure 2012/0175/COD: COM (2012) 360: Proposal for a Directive of the European Parliament and of the Council on insurance mediation (recast).

European Commission (2020). Insurance distribution: EU laws improving the way insurance products are sold. Retrieved from https://ec.europa.eu/info/business-economy-euro/banking-and-finance/insurance-and-pensions/insurance-distribution_en#eu-rules-on-insurance-distribution

European Insurance and Occupational Pensions Authority (2018). *Insurance Distribution Directive - Evaluation of the Structure of Insurance Intermediaries Markets in Europe*. Luxembourg. Retrieved from https://eiopa.europa.eu/Publications/Reports/IDD%20Evaluation%20of%20intermediary%20markets.pdf

European Insurance and Occupational Pensions Authority (2019). Insurance Distribution Directive. Retrieved from https://eiopa.europa.eu/consumer-protection/insurance-distribution-directive

European Insurance and Occupational Pensions Authority (2020). General Good Provisions. Retrieved from https://www.eiopa.europa.eu/general-good-provisions

Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, *Official Journal of the European Union* 19 (2016a).

Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, 2016 *Official Journal of the European Union* 19 (2016b).

Federal Ministry Republic of Austria Digital and Economic Affairs (2020). Provisions of Austrian law governing insurance intermediaries. Retrieved from https://www.bmdw.gv.at/en/Topics/Enterprise/InsuranceMediation/Provisions-of-Austrian-law-governing-insurance-intermediaries.html?lang=en

Fielding, N., Lee, R. M., & Blank, G. (Eds.) (2017). *The SAGE handbook of online research methods* (Second edition). London: SAGE Publications.

Financial Conduct Authority (2016). About the FCA. Retrieved from https://www.fca.org.uk/about/the-fca

Financial Conduct Authority (2018). Insurance Distribution Directive. Retrieved from https://www.fca.org.uk/firms/insurance-distribution-directive

Focht, U., Richter, A., & Schiller, J. (2013). Intermediation and (Mis-)Matching in Insurance Markets-Who Should Pay the Insurance Broker? *Journal of Risk and Insurance*, *80*(2), 329–350.

Gächter, S., & Königstein, M. (2009). Design a Contract: A Simple Principal-Agent Problem as a Classroom Experiment. *The Journal of Economic Education*, *40*(2), 173–187.

Gaganis, C., & Pasiouras, F. (2013). Financial supervision regimes and bank efficiency: International evidence. *Journal of Banking & Finance*, *37*(12), 5463–5475.

Gravelle, H. (1994). Remunerating Information Providers: Commissions Versus Fees in Life Insurance. *Journal of Risk and Insurance*. (61), 425–457.

Güth, W., Klose Wolfgang, Königstein, M., & Schwalbach, J. (1998). An Experimental Study of a Dynamic Principal-Agent Relationship. *Managerial and decision economics*, *19*(4/5), 327–341.

Haines, F. H. (1926). *Chapters of Insurance History: The Origin & Development of Insurance in England*: Post magazine & insurance monitor.

Hall, R. (2014). The Development of Regional Policy in the Process of European Integration: An Overview. In G. Bischof (Ed.), *Regional Economic Development Compared: EU-Europe and the American South* (pp. 13–33). s.l.: innsbruck university press.

Ho, R. (2017). *Understanding statistics for the social sciences with IBM SPSS*. Boca Raton, London, New York: CRC Press Taylor & Francis Group.

Howe, V., Hoffman, K. D., & Hardigree, D. W. (1994). The relationship between ethical and customer-oriented service provider behaviors. *Journal of Business Ethics*, *13*(7), 497–506.

International Association of Insurance Supervisors (2018). Insurance Core Principles: Standards, Guidance and Assessment Methodology. Retrieved from www.iaisweb.org

Jensen, M. C. (1994). Self-interest, Altruism, Incentives, and Agency Theory. *Journal of Applied Corporate Finance*, *7*(2), 40–45.

Joseph, M., Stone, G., & Anderson, K. (2003). Insurance customers' assessment of service quality: A critical evaluation. *Journal of Small Business and Enterprise Development*, *10*(1), 81–92.

Keser, C., & Willinger, M. (2000). Principals' principles when agents' actions are hidden. *International Journal of Industrial Organization*, *18*(1), 163–185.

Kirstein, A. (2008). Bonus and Malus in Principal-Agent Relations with Fixed Pay and Real Effort. *Schmalenbach Business Review*, *60*(3), 280–303.

Klein, R. W. (1995). Insurance Regulation in Transition. *The Journal of Risk and Insurance*, *62*(3), 363–404.

Konstantinides, G. (2003). *Handbook of the economics of finance*. *Handbooks in economics: Vol. 21*. Amsterdam u.a.: Elsevier.

Kurland, N. B. (1996). Sales Agents and Clients: Ethics, Incentives, and a Modified Theory of Planned Behavior. *Human Relations*, *49*(1), 51–74.

Laffont, J., & Martimort, D. (2002). *The theory of incentives: The principal-agent model*. *Princeton paperbacks*.

Lindgren, C., Garcia, G., & Saal, M. I. (1998). *Bank soundness and macroeconomic policy* (Reprinted February). Washington, DC: Internat. Monetary Fund.

Lorent, B. (2008). *Risks and Regulation of Insurance Companies: Is Solvency II the Right Answer?* Université Libre de Bruxelles.

Ma, Y., Pope, N., & Xie, X. (2014). Contingent Commissions, Insurance Intermediaries, and Insurer Performance. *Risk management and insurance review*, *17*(1), 61–81.

Microsoft. Power BI. Retrieved from https://powerbi.microsoft.com/en-us/

Morrison, A. D. (2002). *The Economics of Capital Regulation in Financial Conglomerates.* University of Oxford, Merton College and Saïd Business School.

OECD (1998). Competition and Related Regulation Issues in the Insurance Industry. Retrieved from http://www.oecd.org/dataoecd/34/25/1920099.pdf

Plantin, G., & Rochet, J. (2009). *When Insurers Go Bust: An Economic Analysis of the Role and Design of Prudential Regulation*. Princeton: Princeton University Press.

Polonchek, J., & Miller, R. K. (1999). Contagion Effects in the Insurance Industry. *The Journal of Risk and Insurance*, *66*(3), 459.

PRUDENTIAL INSURANCE COMPANY OF AMERICA (1915). *Documentary History of Insurance: 1000 B.C. - 1875 A.D.* Newark, New Jersey: Prudential Press.

Punch, K. F. (2010). *Survey research: The basics*. *Essential resources for social research*. London, Thousand Oaks, Calif: SAGE Publications.

Rechtsinformationssystem des Bundes, *Versicherungsvertriebsrechts-Änderungsgesetz* (2018).

Regan, L. (1997). Vertical Integration in the Property-Liability Insurance Industry: A Transaction Cost Approach. *Journal of Risk and Insurance*. (64), 41–62.

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

Schmidt-Atzert, L., Amelang, M., & Fydrich, T. (2012). *Psychologische Diagnostik: Mit 82 Tabellen* (5., vollständig überarbeitete und erweiterte Auflage). *Springer-Lehrbuch*. Berlin: Springer.

Shetty, A., & Basri, S. (2018). Relationship orientation in banking and insurance services – a review of the evidence. *Journal of Indian Business Research*, *10*(3), 237–255.

Skipper, H. D. (1995). Market Conduct Issues and the Transformation of the U.S. Life Insurance Business. *Journal of the American Society of CLU and*. (49 (March)), 36–45.

Statista (2019). Largest insurance groups in Hungary in 2017, by gross written premiums. Retrieved from https://www.statista.com/statistics/901311/largest-insurance-groups-in-hungary-by-gross-written-premiums/

Statista (2020). Marktanteile der Versicherungen in Österreich im Jahr 2019. Retrieved from https://de.statista.com/statistik/daten/studie/307451/umfrage/marktanteile-der-versicherungsgesellschaften-in-oesterreich/

SurveyMonkey [Computer software]: SurveyMonkey. Retrieved from https://www.surveymonkey.com/mp/aboutus/

Veris, C., & Goddet, P. (2018). Insurance Distribution Directive: 2018: a challenging year for the European insurance sector. *Performance magazine*. (issue 25), 32–45.

Wirtschaftskammer Österreich (2020). IDD und Versicherungsvermittlung: Versicherungsvertriebsrichtlinie und weitere Informationen für Finanzdienstleister. Retrieved from https://www.wko.at/branchen/information-consulting/finanzdienstleister/idd-versicherungsvertriebsrichtlinie.html

XPRIMM (2019). Insurance Report: Full Year 2019. (1/May), 1–108.

Glossary

Adverse selection	is a market situation where buyers and sellers have different information and this information is used selectively in situations which benefit them the most, at the expense of the other participant.
Affinity business	is a concept that consists of a partnership between two companies selling different products or services as their core business but extend their product offer with the others company's product or service, resulting in a greater customer base.
Ancillary insurance intermediary	is a natural or legal person, who takes up or performs the activity of insurance distribution on an ancillary basis for remuneration.
Basel II	is the second Basel accord. Those accords are recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision. Basel II, published in 2004, intends to amend international banking standards that control how much capital banks require facing certain risks.
Combined ratio	measures underwriting performance and is the ratio of losses to premiums. A combined ratio lower than 100% indicates an underwriting profit, while above 100% indicates a loss.
Contagious run	is an unjustified panic condition in which liability holders withdraw funds from the financial institution without determining the actual risk situation of the institution. This action usually occurs at different institutions simultaneously.

Economies of scale	are cost advantages for companies when their production becomes efficient. This happens when the costs are spread over many products and is achieved by increasing the production or lowering the costs.
End-to-end insurance life cycle	describes the insurance process from beginning to end, which starts with the selling of the product, underwriting the risk and ends with paying a claim to the customer.
Incentivization	is the practice of building incentives to motivate the actor or make something more attractive.
Inversion of the production cycle	is the economic terminology of the production process of the insurance product. It is seen as inverted because the revenues forego the expenses.
Junk bond	is a term for a bond that is rated below investment grade. These high-yield bonds have a higher default risk but offer higher yields to make them more attractive to investors.
Liquidity risk	is the financial risk that an asset for a certain time cannot be traded quickly enough in the market without having a major impact on the market price.
Loss ratio	is the ratio of total losses in claims divided by the total premiums earned.
Moral hazard	is a phenomenon that occurs when an individual is incentivized to increase the own risk because they do not bear the full costs of that risk.
Neoclassical economic theory	focuses on describing goods, outputs, and income distribution in markets through the concept of supply and demand.
Underwriting return on equity	shows the operating result of the insurance business divided by the equity allocated to this business. The operating result is defined as the premiums less claims and expenses.
Unit-linked life insurance product	is a combination of insurance and investment parts. A portion of the premium paid is used to provide insurance coverage and the remaining portion is invested in equity and dept instruments.

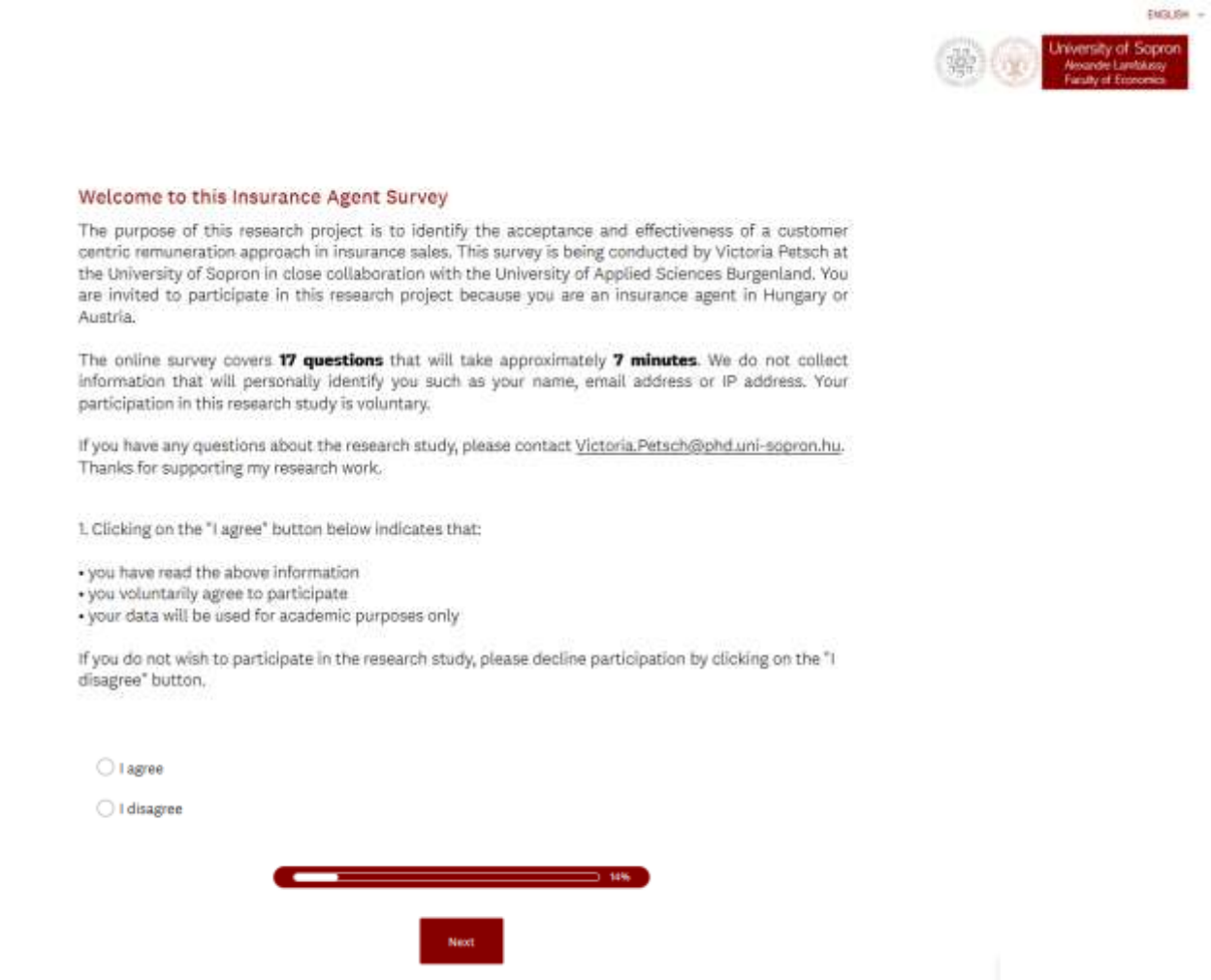
Principal Agent Theory	is also known as agency dilemma and occurs when a person can take actions on behalf of another person. The agent is motivated to act in his or her own best interest, which are contrary to the interest of the principal.
Prudential Regulation	is a type of financial regulation that requires financial companies to control risks and hold adequate capital as defined by requirements, processes, and supervisory controls.
Public interest theory	explains that regulations aim for the protection and the benefit of the public overall. It is about the best possible allocation of scarce resources for individual and collective goods.
Return on asset	is the percentage of how profitable a company's asset is in generating revenue. It is measures by the net income divided by the average total assets.
Secondary legislation	is also referred as delegated legislation or subordinate legislation and is issued by the executive branch. Unlike primary legislation which are acts that delegate specific authority to an executive branch to make more specific laws.
Solvency II	is a directive in the EU law that harmonizes the EU insurance regulation focusing on the amount of capital that insurance companies must hold to reduce the risk of insolvency.
Systemic risk	is the risk of collapse of an entire financial system or market. It is defined as the instability of the financial system.

Appendices

Appendix A: Online Survey English version

The following screenshots show the English version of the online survey in the desktop view.

Page 1:



Page 2:

2. The location where the majority of my customers are located

- In Austria in a City
- In Austria in the Countryside
- In Hungary in a City
- In Hungary in the Countryside
- Other (please specify):

3. My Role

- Employed exclusive sales agent
- Self-employed exclusive sales agent
- Other (please specify):

4. My Company

- Aegon
- Allianz
- Generali
- Groupama
- Uniqa
- Vienna Insurance Group
- Other (please specify):

5. How long have you been working in insurance sales?

- < 2 years
- 2-5 years
- 6-10 years
- 11-20 years
- > 20 years

6. Do you have the option to receive a bonus or an incentive payment in addition to regularly paid commissions?

- Yes
- No

Page 3:

7. Did you receive a bonus or incentive payment in 2019?

- ○ Yes
- ○ No

8. What are your underlying KPIs to receive a bonus or incentive payment? (multiple answers possible)

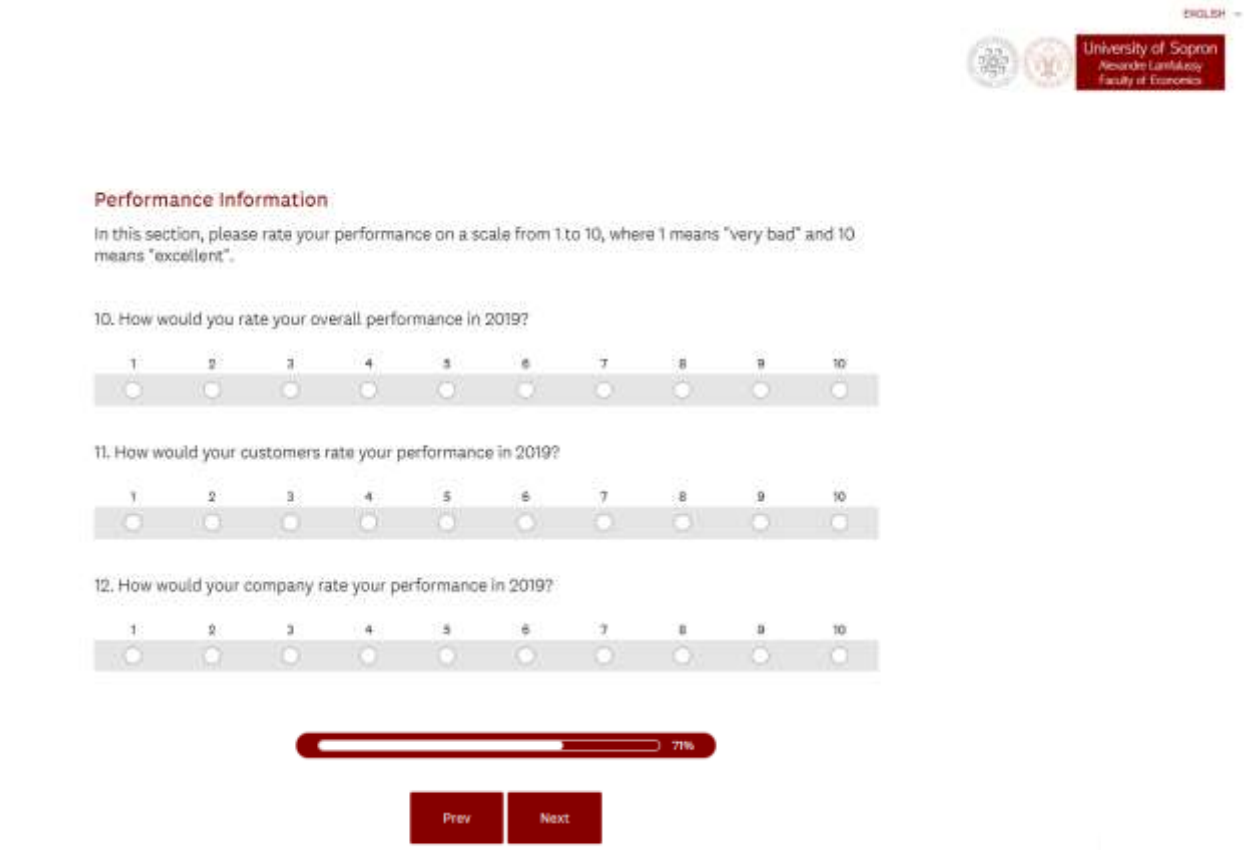
- ☐ sum of premium sold
- ☐ number of policies sold
- ☐ number of customers
- ☐ loss ratio
- ☐ customer satisfaction
- ☐ mix of business
- ☐ specific lines of business
- ☐ customer appointments per week
- ☐ amount of commissions received
- ☐ Others (please specify):

Page 4:

9. How big is the influence of the respecive KPI to receive a bonus or incentive payment?

	Small influence	Important influence	Very important influence
sum of premium sold	○	○	○
number of policies sold	○	○	○
number of customers	○	○	○

Page 5:


ENGLISH
University of Sopron
Alexandre Lamfalussy
Faculty of Economics
Performance Information
In this section, please rate your performance on a scale from 1 to 10, where 1 means "very bad" and 10 means "excellent".
10. How would you rate your overall performance in 2019?
1 2 3 4 5 6 7 8 9 10
11. How would your customers rate your performance in 2019?
1 2 3 4 5 6 7 8 9 10
12. How would your company rate your performance in 2019?
1 2 3 4 5 6 7 8 9 10
71%
Prev
Next

Page 6:

ENGLISH

University of Sopron
Alexandre Lamfalussy
Faculty of Economics

Customer Satisfaction Information

Imagine that your company changes all bonus schemes, sales targets and sales plans. The one and only underlying KPI to reach a bonus will be customer satisfaction. The entire bonus budget will be distributed among the Agents solely based on the satisfaction of their customer. This will be measured by the classic 5-star rating (as we know from hotel bookings, restaurant visits or Amazon products). Please see three theoretical examples in the picture below.

13. Please evaluate the scenario of a customer centric bonus model.

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I like this scenario.	○	○	○	○	○
I prefer a customer centric bonus concept over a top-line performance driven one.	○	○	○	○	○
This scenario can work in my company.	○	○	○	○	○

14. What do you think, how would your sales performance, which is the sum of premium sold, change with this new concept? (in%)

Decrease — Stay the same — Increase

15. What do you think, how would the overall sales performance of agents in your company change? (in%)

Decrease — Stay the same — Increase

16. What do you think, how would the satisfaction of your customers change? (in%)

Decrease — Stay the same — Increase

17. What do you think, how would your bonus or incentive payment develop with the new approach? (in%)

Decrease — Stay the same — Increase

Prev Next

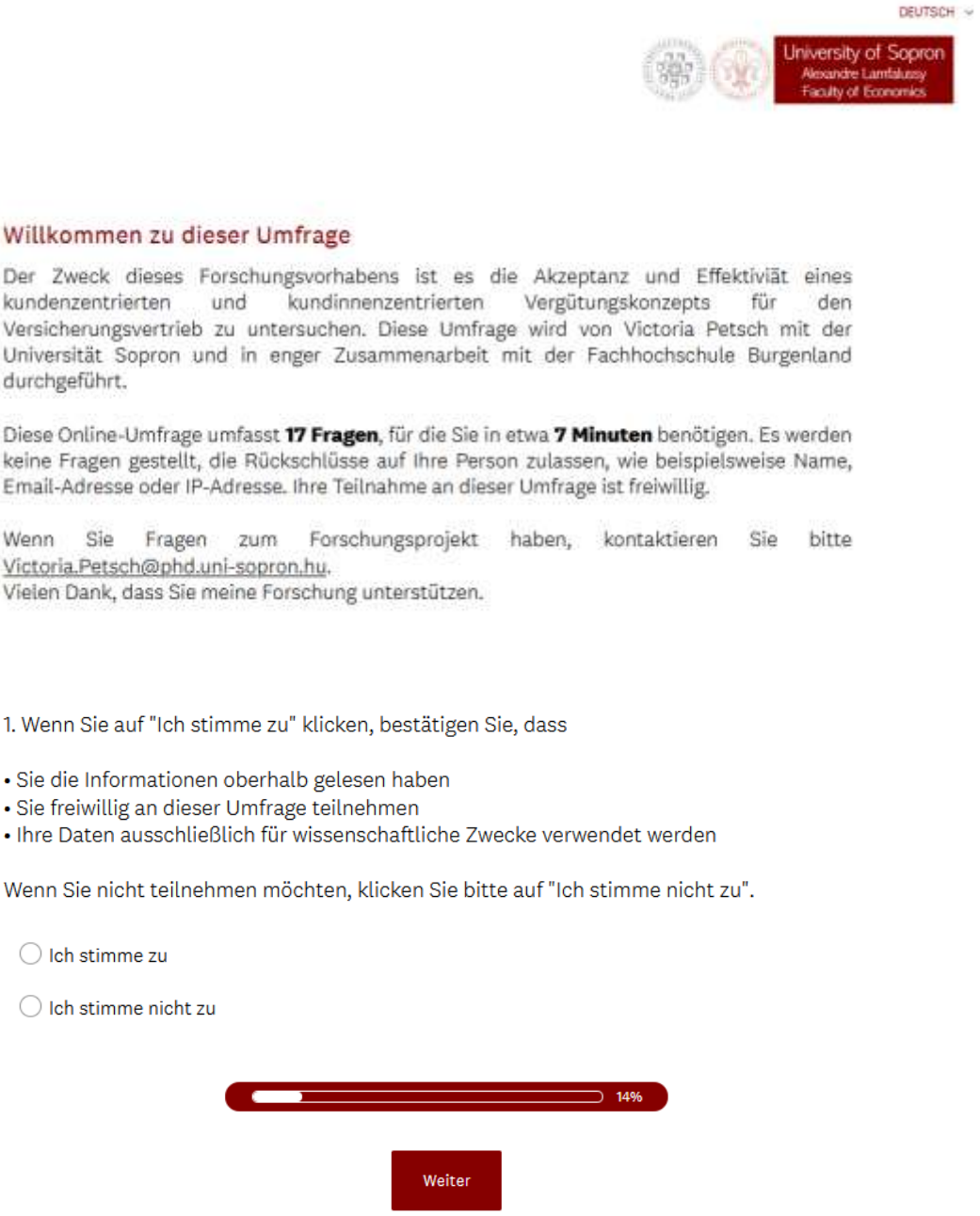
Page 7:


ENGLISH
University of Sopron
Alexandre Lamfalussy
Faculty of Economics
All done! Thanks for completing this survey.
Please contact me in case you have any remaining questions.
Victoria.Petsch@phd.uni-sopron.hu
100%
Prev
Done

Appendix B: Online Survey German version

The following screenshots show the German version of the online survey in the tablet view.

Page 1:



Page 2:

DEUTSCH

University of Sopron
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Faculty of Economics

2. Hier sind überwiegend meine Kunden und Kundinnen zu Hause

- ◯ In Österreich in einer Stadt
- ◯ In Österreich am Land
- ◯ In Ungarn in einer Stadt
- ◯ In Ungarn am Land
- ◯ Anderes (bitte angeben)

3. Meine Funktion

- ◯ Angestellter Exklusiver Versicherungsagent oder Versicherungsagentin
- ◯ Selbstständiger Exklusiver Versicherungsagent oder Versicherungsagentin
- ◯ Anderes (bitte angeben)

4. Mein Versicherungsunternehmen

- ◯ Aegon
- ◯ Allianz
- ◯ Generali
- ◯ Groupama
- ◯ Uniqa
- ◯ Vienna Insurance Group
- ◯ Anderes (bitte angeben)

5. Wie lange arbeiten Sie schon im Versicherungsvertrieb?

- ◯ < 2 Jahre
- ◯ 2-5 Jahre
- ◯ 6-10 Jahre
- ◯ 11-20 Jahre
- ◯ > 20 Jahre

6. Haben Sie die Möglichkeit einen Bonus zusätzlich zu laufenden Provisionszahlungen zu erhalten?

- ◯ Ja
- ◯ Nein

Zurück Weiter

Page 3:

DEUTSCH

7. Haben Sie im Jahr 2019 einen Bonus erhalten?

- ◯ Ja
- ◯ Nein

8. Was sind Ihre zugrundeliegenden Kennzahlen, um einen Bonus zu erhalten? (Mehrfachnennung möglich)

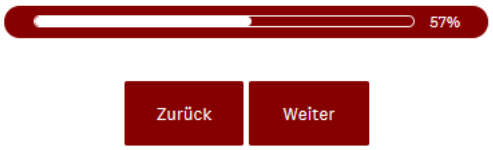
- [ ] Summe der verkauften Prämien
- [ ] Anzahl der verkauften Polizzen / Verträge
- [ ] Anzahl der Kunden und Kundinnen
- [ ] Schadensquote
- [ ] Kundenzufriedenheit und Kundinnenzufriedenheit
- [ ] Business-Mix
- [ ] Bestimmte Sparte
- [ ] Kundentermine und Kundinnentermine pro Woche
- [ ] Summe der erhaltenen Provisionen
- [ ] Anderes (bitte angeben)

Zurück Weiter

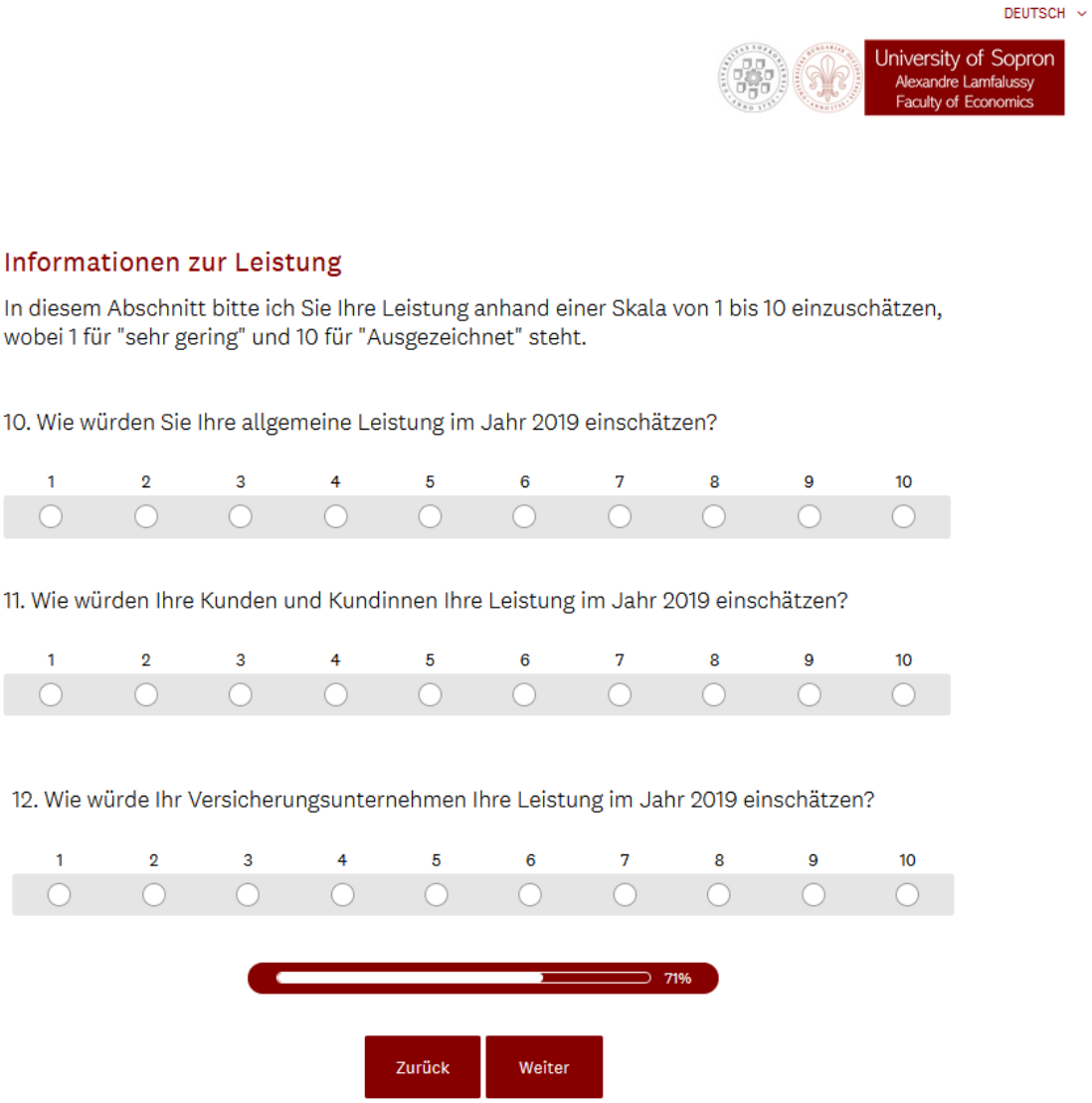
Page 4:

9. Wie groß ist der Einfluss der jeweiligen Kennzahl zur Erreichung eines Bonus?

	Geringer Einfluss	Großer Einfluss	Sehr großer Einfluss
Summe der verkauften Prämien	○	○	○
Anzahl der verkauften Polizzen / Verträge	○	○	○
Anzahl der Kunden und Kundinnen	○	○	○


57%
Zurück
Weiter

Page 5:


DEUTSCH
University of Sopron
Alexandre Lamfalussy
Faculty of Economics
Informationen zur Leistung
In diesem Abschnitt bitte ich Sie Ihre Leistung anhand einer Skala von 1 bis 10 einzuschätzen, wobei 1 für "sehr gering" und 10 für "Ausgezeichnet" steht.
10. Wie würden Sie Ihre allgemeine Leistung im Jahr 2019 einschätzen?
1 2 3 4 5 6 7 8 9 10
11. Wie würden Ihre Kunden und Kundinnen Ihre Leistung im Jahr 2019 einschätzen?
1 2 3 4 5 6 7 8 9 10
12. Wie würde Ihr Versicherungsunternehmen Ihre Leistung im Jahr 2019 einschätzen?
1 2 3 4 5 6 7 8 9 10
71%
Zurück
Weiter

Page 6:

DEUTSCH

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Informationen zur Kundenzufriedenheit und Kundinnenzufriedenheit

Stellen Sie sich vor, dass Ihr Versicherungsunternehmen alle Bonusschemata, Vertriebsziele und Vertriebspläne ändert. Die alleinige Kennzahl, um einen Bonus zu erhalten, ist ab jetzt die Kundenzufriedenheit und Kundinnenzufriedenheit. Das gesamte Bonusbudget wird ausschließlich anhand der jeweiligen Kundenzufriedenheit und Kundinnenzufriedenheit an die Agenten und Agentinnen verteilt. Diese wird anhand der klassischen 5-Sterne-Bewertung gemessen (wie wir sie von Hotelbuchungen, Restaurantbesuchen oder Online Einkäufen kennen). Bitte sehen Sie drei theoretische Beispiele im Bild unterhalb.

13. Bitte bewerten Sie dieses Szenario, eines kundenorientierten und kundinnenorientierten Bonusmodells.

	Stimme überhaupt nicht zu	Stimme nicht zu	Neutral	Stimme zu	Stimme voll und ganz zu
Mir gefällt dieses Szenario.	○	○	○	○	○
Ein kundenzentrierter und kundinnenzentrierter Ansatz ist mir lieber als ein umsatzorientiertes Leistungsmodell.	○	○	○	○	○
Dieses Szenario kann in meinem Versicherungsunternehmen funktionieren.	○	○	○	○	○

14. Was schätzen Sie, wie würde sich Ihre eigene Vertriebsleistung, also die Summe Ihrer verkauften Prämien, mit diesem neuen Modell verändern? (in%)

15. Was schätzen Sie, wie würde sich die Vertriebsleistung aller Agenten und Agentinnen in Ihrem Versicherungsunternehmen verändern? (in%)

16. Was schätzen Sie, wie würde sich die Zufriedenheit Ihrer Kunden und Kundinnen verändern? (in%)

17. Was schätzen Sie, wie würde sich Ihr Bonus mit diesem neuen Modell verändern? (in%)

Zurück Weiter

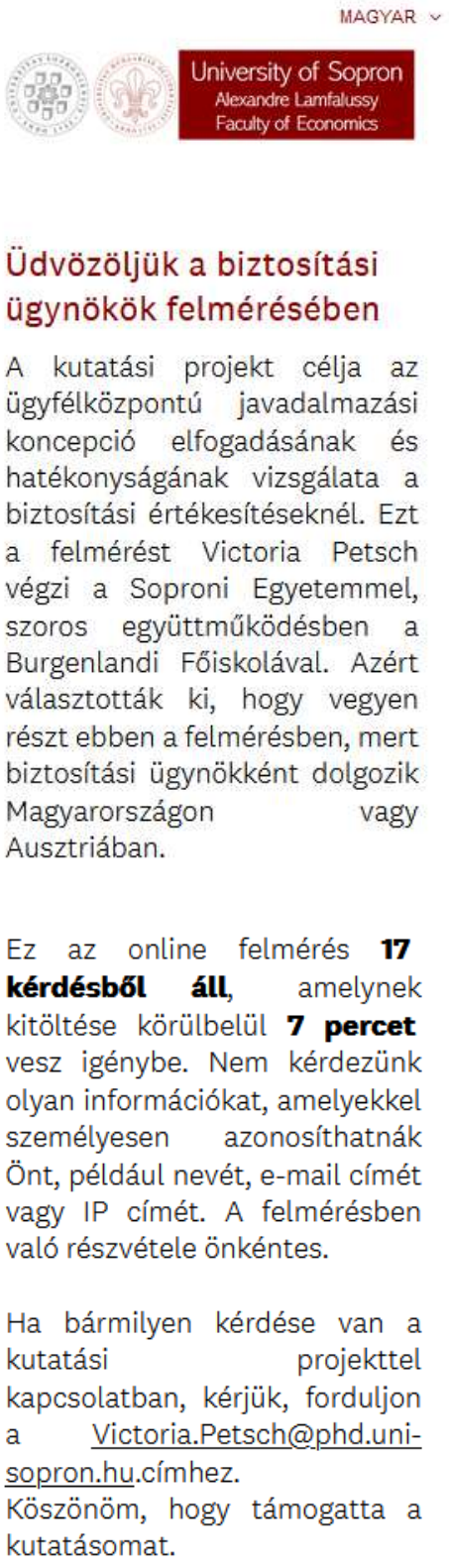
Page 7:

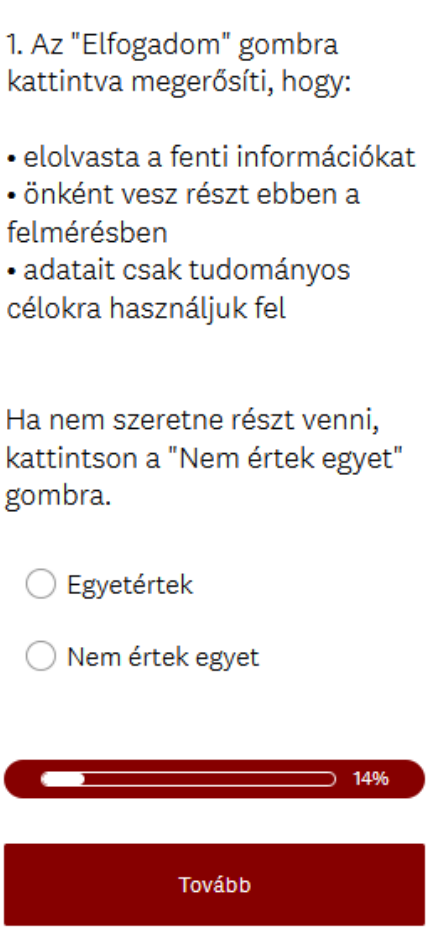

DEUTSCH
University of Sopron
Alexandre Lamfalussy
Faculty of Economics
Geschafft! Vielen Dank, dass Sie an dieser Umfrage teilgenommen haben.
Bitte kontaktieren Sie mich, falls Sie noch weitere Fragen haben.
Victoria.Petsch@phd.uni-sopron.hu
100%
Zurück
Fertig

Appendix C: Online Survey Hungarian version

The following screenshots show the Hungarian version of the online survey in the phone view.

Page 1:





Page 2:

MAGYAR

2. Itt találhatóak nagyrészt az ügyfeleim

- Ausztriában egy városban
- Ausztriában egy faluban
- Magyarországon egy városban
- Magyarországon egy faluban
- Egyéb (kérem adja meg):

3. Alkalmazotti formám

- Alkalmazott üzletkötő
- Vállalkozó üzletkötő
- Egyéb (kérem adja meg):

4. Az én biztosítótársaságom

- Aegon
- Allianz
- Generali
- Groupama
- Uniqa
- Vienna Insurance Group
- Egyéb (kérem adja meg):

5. Mióta dolgozik a biztosítási értékesítésben?

- < 2 éve
- 2-5 éve
- 6-10 éve
- 11-20 éve
- > 20 éve

6. Van lehetősége arra, hogy a megszokott jutalékokon kívül céljutalékokat is megszerezzen?

- Igen
- Nem

29%

Vissza Tovább

Page 3:

7. Kapott céljutalékot 2019-ben?

- ○ Igen
- ○ Nem

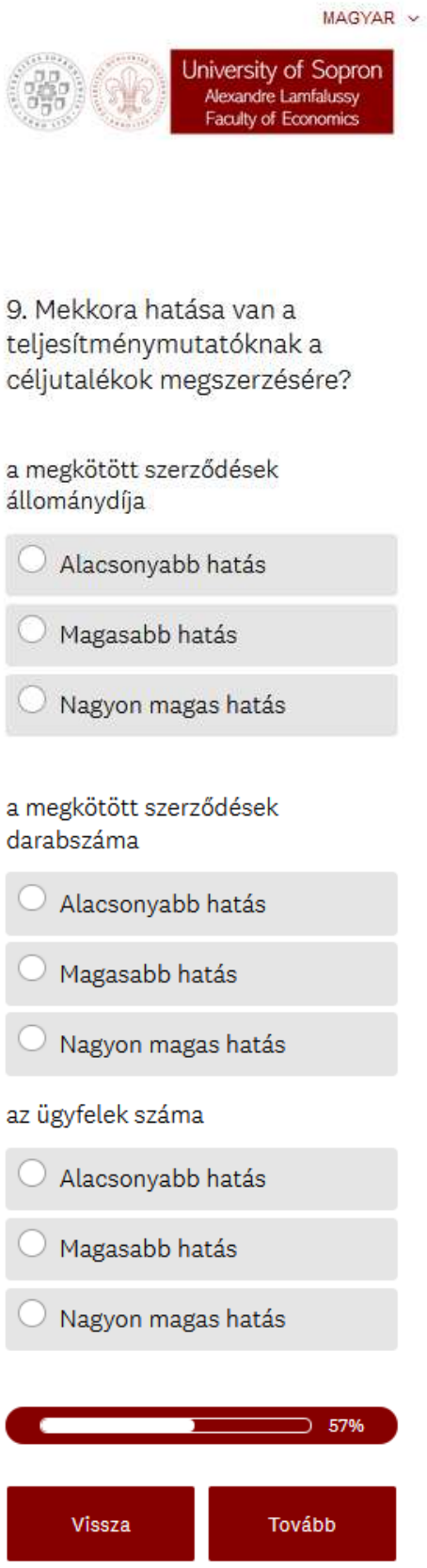
8. Milyen mutatók alapján van lehet?sége a céljutalékok megszerzésére? (több válasz lehetséges)

- ☐ a megkötött szerződések állománydíja
- ☐ a megkötött szerződések darabszáma
- ☐ az ügyfelek száma
- ☐ a szerződések kárhányada
- ☐ az ügyfelek elégedettsége
- ☐ Business-Mix
- ☐ egy bizonyos szakterület
- ☐ a heti ügyféltalálkozók száma
- ☐ a kifizetett jutalékok összege
- ☐ Egyéb (kérem adja meg):

43%

Vissza Tovább

Page 4:


MAGYAR
University of Sopron
Alexandre Lamfalussy
Faculty of Economics
9. Mekkora hatása van a teljesítménymutatóknak a céljutalékok megszerzésére?
a megkötött szerződések állománydíja
Alacsonyabb hatás
Magasabb hatás
Nagyon magas hatás
a megkötött szerződések darabszáma
Alacsonyabb hatás
Magasabb hatás
Nagyon magas hatás
az ügyfelek száma
Alacsonyabb hatás
Magasabb hatás
Nagyon magas hatás
57%
Vissza
Tovább

Page 5:

MAGYAR

A teljesítményre vonatkozó információk

Ebben a részben arra kérem Önt, hogy értékelje teljesítményét 1-től 10-ig terjedő skálán, ahol az 1 jelentése "nagyon gyenge", 10 pedig a "kiváló".

10. Hogyan értékelné az általános teljesítményét 2019-ben?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

11. Hogyan értékelnék ügyfelei a 2019-es teljesítményét?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

12. Hogyan értékelné biztosítótársasága a 2019-es teljesítményét?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

71%

Vissza Tovább

Page 6:

MAGYAR

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Faculty of Economics

Ügyfél-elégedettségi információk

Képzelje el, hogy a biztosítótársaság megváltoztatja az összes céljutalék-rendszert, értékesítési célt és értékesítési tervet. Az egyetlen kulcs teljesítménymutató, hogy céljutalékot kapjon mostantól az ügyfél elégedettsége. Az ügynökök részére a teljes céljutalék-költségvetést kizárólag az adott ügyfél-elégedettség alapján osztják szét. Ezt a klasszikus 5 csillagos minősítéssel mérik (amelyet szállodai foglalásokból, éttermi látogatásokból vagy online vásárlásokból már ismerünk).

Kérem, olvassa el az alábbi kép három elméleti példáját.

13. Kérem, értékelje ezt az ügyfélközpontú céljutalék-modell forgatókönyvet.

Tetszik ez a forgatókönyv.

- ○ Egyáltalán nem értek egyet
- ○ Nem értek egyet
- ○ Semleges
- ○ Egyetértek
- ○ Teljes mértékben egyetértek

Az ügyfélközpontú megközelítést részesítem előnyben az értékesítésorientált teljesítménymodell helyett.

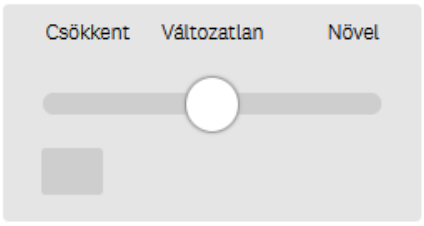
- ○ Egyáltalán nem értek egyet
- ○ Nem értek egyet
- ○ Semleges
- ○ Egyetértek
- ○ Teljes mértékben egyetértek

Ez a forgatókönyv az én cégemben is működhet.

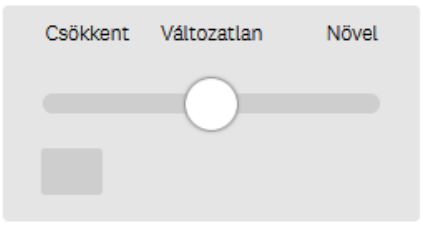
- ○ Egyáltalán nem értek egyet
- ○ Nem értek egyet
- ○ Semleges
- ○ Egyetértek
- ○ Teljes mértékben egyetértek

14. Mit gondol, hogyan változna a saját értékesítési teljesítménye, vagyis az állománydíjak összege ezzel az új modellel? (%-ban)

15. Mit gondol, hogyan változna a biztosítótársaság összes ügynökének értékesítési teljesítménye? (%-ban)



16. Mit gondol, hogyan változna az ügyfelek elégedettsége? (%-ban)



17. Mit gondol, hogyan változna a céljutaléka ezzel az új modellel? (%-ban)

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MAGYAR
University of Sopron
Alexandre Lamfalussy
Faculty of Economics
Teljesítve! Köszönjük, hogy részt vett ebben a felmérésben.
Kérem, ha további kérdése van, vegye fel velem a kapcsolatot.
Victoria.Petsch@phd.uni-sopron.hu
100%
Vissza
Kész

Appendix D: Chi-Square calculations

Chi-Square Goodness-of-Fit Test of variable "prefer customer centric bonus"

Data values

	Prefer customer centric bonus
Strongly Disagree	35
Disagree	74
Neutral	124
Agree	172
Strongly Agree	118

$\chi^2_{stat} = 104{,}008$
$\chi^2_{crit} = 9{,}488$
degrees of freedom (df) = 4
significance = 0.050
significant difference (reject H0)

Chi-Square Goodness-of-Fit Test of variable "like scenario"

Data values

	Like scenario
Strongly Disagree	38
Disagree	63
Neutral	131
Agree	187
Strongly Agree	104

$\chi^2_{stat} = 130{,}528$
$\chi^2_{crit} = 9{,}488$
degrees of freedom (df) = 4
significance = 0.050
significant difference (reject H0)

Chi-Square Goodness-of-Fit Test of variable "scenario work in my company"

Data values

	Scenario work in my company
Strongly Disagree	43
Disagree	91
Neutral	145
Agree	179
Strongly Agree	65

$\chi^2_{stat} = 121{,}560$
$\chi^2_{crit} = 9{,}488$
degrees of freedom (df) = 4
significance = 0.050
significant difference (reject H0)

Chi-Square Test of Independence for variables "location" & "prefer customer centric bonus"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In Austria City and Countryside	2	1	0	1	0
In Austria in a City	23	25	52	51	22
In Austria in the Countryside	9	38	52	53	53
In Hungary City and Countryside	0	3	1	8	8
In Hungary in a City	0	6	18	52	34
In Hungary in the Countryside	1	1	1	7	1

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In Austria City and Countryside	0.267	0.565	0.948	1.315	0.902
In Austria in a City	11.577	24.478	41.017	56.894	39.032
In Austria in the Countryside	13.718	29.005	48.604	67.418	46.252
In Hungary City and Countryside	1.338	2.829	4.741	6.577	4.512
In Hungary in a City	7.361	15.564	26.080	36.175	24.818
In Hungary in the Countryside	0.736	1.556	2.608	3.617	2.481

$\chi^2_{stat} = 83{,}150$
$\chi^2_{crit} = 31{,}410$
degrees of freedom (df) = 20
significance = 0.050
Dependent (reject H0)

Chi-Square Test of Independence for variables "company" & "prefer customer centric bonus"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1 (company name hidden)	15	25	48	72	49
2 (company name hidden)	0	6	6	22	19
3 (company name hidden)	0	0	2	7	0
4 (company name hidden)	5	11	20	17	16
5 (company name hidden)	15	32	32	54	34

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1 (company name hidden)	13.986	29.571	49.552	68.734	47.154
2 (company name hidden)	3.546	7.499	12.565	17.430	11.957
3 (company name hidden)	0.602	1.273	2.133	2.959	2.030
4 (company name hidden)	4.617	9.762	16.359	22.692	15.567
5 (company name hidden)	12.246	25.892	43.388	60.183	41.288

$\chi^2_{stat} = 30{,}018$
$\chi^2_{crit} = 26{,}296$
degrees of freedom (df) = 16
significance = 0.050
Dependent (reject H0)

Chi-Square Test of Independence for variables "years" & "prefer customer centric bonus"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
< 2 years	2	0	9	10	7
2-5 years	3	2	16	15	22
6-10 years	6	7	12	27	17
11-20 years	7	30	41	57	14
< 20 years	17	35	46	63	58

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
< 2 years	1.873	3.961	6.63	9.208	6.317
2-5 years	3.881	8.206	13.751	19.074	13.086
6-10 years	4.617	9.762	16.359	22.692	15.567
11-20 years	9.971	21.082	35.326	49.001	33.617
< 20 years	14.655	30.986	51.923	72.022	49.411

$\chi^2_{stat} = 42{,}979$
$\chi^2_{crit} = 26{,}296$
degrees of freedom (df) = 16
significance = 0.050
Dependent (reject H0)

Chi-Square Test of Independence for variables "location" & "scenario work in my company"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In Austria City and Countryside	2	1	0	1	0
In Austria in a City	20	42	47	54	10
In Austria in the Countryside	17	43	63	60	22
In Hungary City and Countryside	0	3	3	7	7
In Hungary in a City	3	2	30	49	26
In Hungary in the Countryside	1	0	2	8	0

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In Austria City and Countryside	0.328	0.695	1.108	1.369	0.497
In Austria in a City	14.223	30.101	47.963	59.210	21.500
In Austria in the Countryside	16.854	35.669	56.835	70.162	25.478
In Hungary City and Countryside	1.644	3.479	5.544	6.845	2.485
In Hungary in a City	9.043	19.139	30.497	37.648	13.671
In Hungary in the Countryside	0.904	1.913	3.049	3.764	1.367

$\chi^2_{stat} = 81{,}567$
$\chi^2_{crit} = 31{,}410$
degrees of freedom (df) = 20
significance = 0.050
Dependent (reject H0)

Chi-Square Test of Independence for variables "company" & "scenario work in my company"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1 (company name hidden)	19	33	61	77	19
2 (company name hidden)	2	3	12	19	17
3 (company name hidden)	0	0	5	2	2
4 (company name hidden)	7	9	15	26	12
5 (company name hidden)	15	46	52	55	15

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1 (company name hidden)	17.183	36.365	57.944	71.531	25.975
2 (company name hidden)	4.357	9.221	14.694	18.139	6.586
3 (company name hidden)	0.739	1.565	2.495	3.080	1.118
4 (company name hidden)	5.673	12.005	19.130	23.615	8.575
5 (company name hidden)	15.045	31.841	50.736	62.632	22.743

$\chi^2_{stat} = 44{,}776$
$\chi^2_{crit} = 26{,}296$
degrees of freedom (df) = 16
significance = 0.050
Dependent (reject H0)

Chi-Square Test of Independence for variables "years" & "scenario work in my company"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
< 2 years	1	1	13	8	5
2-5 years	3	8	11	22	14
6-10 years	8	13	12	27	9
11-20 years	16	24	41	53	15
< 20 years	15	45	68	69	22

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
< 2 years	2.302	4.871	7.762	9.583	3.479
2-5 years	4.768	10.091	16.080	19.850	7.208
6-10 years	5.673	12.005	19.130	23.615	8.575
11-20 years	12.250	25.925	41.309	50.996	18.518
< 20 years	18.005	38.105	60.717	74.954	27.217

$\chi^2_{stat} = 27{,}935$
$\chi^2_{crit} = 26{,}296$
degrees of freedom (df) = 16
significance = 0.050
Dependent (reject H0)

Chi-Square Test of Independence for variables "bonus_received" & "prefer customer centric bonus"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	15	17	36	66	43
Yes	20	57	88	106	75

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	11.845	25.043	41.965	58.210	39.934
Yes	23.154	48.956	82.034	113.789	78.065

$\chi^2_{stat} = 8{,}389$
$\chi^2_{crit} = 9{,}488$
degrees of freedom (df) = 4
significance = 0.050
Independent (fail to reject H0)

Chi-Square Test of Independence for variables "bonus_received" & "scenario work in my company"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	17	26	49	64	21
Yes	26	65	96	115	44

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	14.552	30.797	49.072	60.579	21.998
Yes	28.447	60.202	95.927	118.420	43.001

$\chi^2_{stat} = 2{,}112$
$\chi^2_{crit} = 9{,}488$
degrees of freedom (df) = 4
significance = 0.050
Independent (fail to reject H0)

Chi-Square Test of Independence for variables "bonus_received" & "like scenario"

Data values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	18	19	44	63	33
Yes	20	44	87	124	71

Expected values

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
No	12.860	21.321	44.334	63.286	35.196
Yes	25.139	41.678	86.665	123.713	68.803

$\chi^2_{stat} = 3{,}700$
$\chi^2_{crit} = 9{,}488$
degrees of freedom (df) = 4
significance = 0.050
Independent (fail to reject H0)

DECLARATION

I, **Victoria Petsch**, by signing this declaration declare that my PhD thesis is my own work. During the dissertation I complied with the Act LXXVI of 1999 and the rules of the doctoral dissertation prescribed by the Doctoral School, especially regarding references and citations.[1]

Furthermore, I declare that I did not mislead the supervisor or the programme leader with the dissertation.

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Vienna, 2022 (year) January (month) 8th (day)

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(PhD candidate)

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