Determinants of Direct Distribution: Evidence from the European Insurance Market

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Abstract: *We analyze the determinants of direct distribution activities in the European insurance industry at the country level. We use a sample of 133 country-year observations for aggregate insurance markets from 18 European countries for the years 2005-2017 to analyze if the share of direct sales is affected by the countries' customers' ability to understand insurance products, the countries' customers' access to insurance products and the countries' regulatory environment. Moreover, we analyze if the importance of direct sales has been increasing due to the ongoing digitalization and technological progress in Europe in recent years by comparing the share of direct sales in the recent decade with the preceding years. Our results indicate that the success of direct distribution activities strongly depends on various country level factors, in particular the countries' customers' ability to understand insurance products and the customers' access to insurance products. The importance of direct sales, however, has remained relatively constant, indicating that traditional distribution channels remain important in a changing environment.*

Keywords: *Direct distribution, Insurance, Europe, Financial Services*

1. INTRODUCTION

Insurance firms use a wide variety of channels to distribute their policies. The popularity of each channel varies depending on both the market and the type of insurance product (Insurance Europe, 2021). In recent years, technological progress has made the direct distribution of insurance via internet or telephone more appealing for customers. Insurance policies can quickly and easily be sold via smartphones or other devices, making this channel a suitable alternative to traditional channels such as brokers or tied agents. However, while direct distribution is a major distribution channel in some European countries, it only plays a subordinated role in others. For example, in Portugal, only 5.3% of insurance premiums are sold via direct channel in 2017, while in Croatia, the share of premiums written via direct channel amounts to 52.2%.[1] Given the ongoing technological progress and the growing importance of direct business for insurance firms, knowledge on the factors which explain the heterogeneity between countries regarding the success of direct distribution is an open question that is relevant for various stakeholders. Against this background, we add to the literature a country level analysis on the determinants of direct sales in the European insurance industry.

Distribution is a major success factor for insurance firms, hence a lot of research has been conducted with respect to the relative efficiency or optimal choice of insurance distribution systems (e.g. Joskow, 1973; Barrese and Nelson, 1992; Sass and Gisser, 1989). Most of these studies rely on data from a single country, usually the United States (see Hilliard, Regan and Tennyson, 2013 for a comprehensive literature review). This paucity can mainly be explained by the lack of data, as disclosure requirements vary widely, and most regulatory frameworks around the world do not require insurance firms to disclose the amount of business written via certain distribution channels. However, at the country level, data on the proportion of premiums written via direct channel is available for

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[1] See Insurance Europe Insurance Industry Database (https://www.insuranceeurope.eu/insurancedata).

European countries by the *Insurance Europe Insurance Industry Database*,[2] hence our research overcomes the data restrictions faced by researchers that aim to analyze direct sales at the firm level (Rauch, 2020). This database allows us to extend the literature on factors that affect the amount of insurance business written via direct channel, by analyzing the determinants of direct insurance sales at the country level for a sample of 18 European insurance markets. In addition, in consideration of the ongoing digitalization and technological progress, we analyze if the importance of direct sales has been increasing in Europe in recent years by comparing the share of direct sales in the recent decade with the preceding years.

For our analysis, we use publicly available information provided by Insurance Europe on the amount of insurance premiums written via direct channel at the country level for the years 2005-2017. The sample contains 133 country-year observations for aggregate insurance markets from 18 European countries. We include country level factors provided by the World Bank and Insurance Europe to analyze their impact on the countries' share of direct distribution. In particular, we examine inter country differences in the *Customers' ability to understand insurance products*, the *Customers' access to insurance products* and the *Countries' regulatory environment*.

By way of preview, our results indicate that various country level factors have a significant effect on the success of direct sales in the European insurance sector. In particular, we show that if customers are more experienced with the use of insurance products and have higher levels of education, they are rather prone to purchase insurance products via direct channels due to their better understanding of insurance products. Moreover, in countries with better access to the internet and a lower share of inhabitants in urban areas, direct sales are more common, as customers can more easily use the internet to purchase insurance and have less access to alternative access points such as sales branches. The countries' regulatory environment, however, has a negligible effect on direct sales. In addition, our results show that the share of direct sales in the recent decade has remained stable when compared to the preceding years, indicating that other channels such as brokers and tied agents still play a major role in the insurance sector.

Our research contributes to the literature by providing evidence on the impact of country characteristics on direct sales activities in the European insurance sector. While previous papers (e.g. Joskow, 1973; Barrese and Nelson, 1992; Sass and Gisser, 1989) analyzed insurance distribution systems at the firm level in individual countries, we add an analysis at the country level that provides evidence on the factors that promote the success of direct sales of insurance products. Given the ongoing technological progress, the direct channel's importance will play a major role for insurance firms in the future. Hence, our results are particularly valuable for managers of insurance firms, as they provide evidence on environments that determine the success of direct sales activities, in particular when entering new markets or designing growth strategies. In addition, they show that the share of direct sales remained relatively stable in recent years. This indicates the ongoing relevance of other channels such as brokers and tied agents in a changing market environment, as those traditional channels have also improved their services with the help of digitalization and hence became likewise more attractive to costumers.

The remainder of this paper is organized as follows: The next section provides the literature review and the hypotheses development. This is followed by the data and methodology sections, respectively. The results appear in the succeeding section, and the conclusion follows.

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[2] Insurance Europe is the European insurance and reinsurance federation. Through its 37 member bodies - the national insurance associations - Insurance Europe represents all types of insurance and reinsurance undertakings. See https://www.insuranceeurope.eu/ for further information. The Insurance Industry Database is an interactive tool detailing the latest data from the European (EU and non-EU members) insurance industry. The data is provided by Insurance Europe members.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A wide variety of distribution methods is used in the insurance industry, e.g. brokers, agents, bancassurance and (increasingly) the internet.[3] The choice of a suitable distribution channel depends on both the market and the type of insurance product. This diversity of channels, which makes it possible for insurers to adjust to the differing cultures, needs and preferences in individual markets, is in the interest of consumers (Insurance Europe, 2021; Hilliard, Regan and Tennyson, 2013).

Changing consumer needs and preferences, regulatory developments[4] and technological progress has significantly affected insurance distribution in recent years. In particular, the ongoing digitalization led to massive changes in the insurance sector and also had a significant impact on the distribution of insurance products. Due to the digitalization of their processes and improved access and communication channels with consumers (such as apps and social media), insurers are able to better meet consumers' emerging needs. This development has made the direct distribution model more appealing for many insurance firms (Hilliard, Regan and Tennyson, 2013).[5]

Table 1 shows that in 2017, direct sales account for around 19.6% of insurance sales within Europe[6], providing evidence of the importance of this distribution channel for the European insurance sector.[7]

Table 1. *Distribution mix (% of GWP) in Europe (2017)*
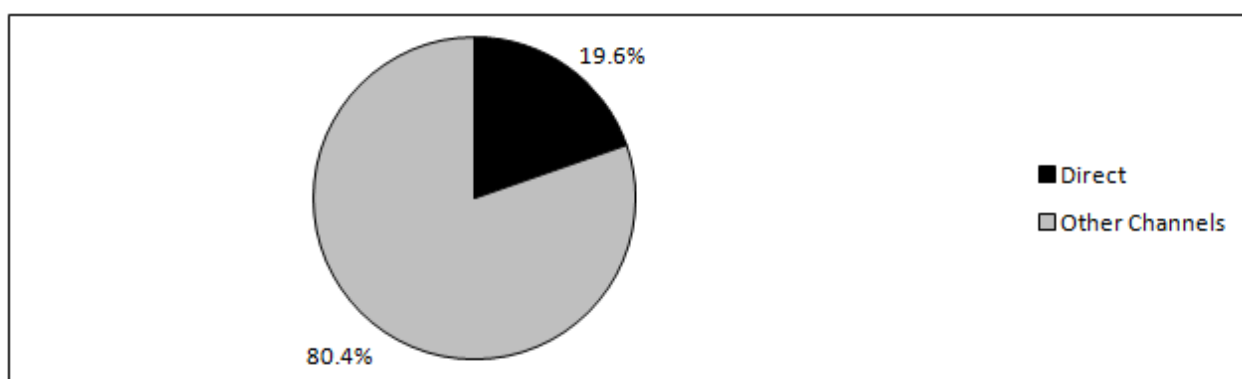
Notes: *The table shows the %-share of insurance gross written premiums of the direct channel (black) and all other channels (bright) in Europe based on a sample of countries which publish the share of direct channel in the year 2017, including: France, Croatia, Luxembourg, Portugal, Spain, Italy, Belgium, Poland, Bulgaria, Slovenia, Czech Republic, Malta. The data is provided by the Insurance Europe Insurance Industry Database.*

Table 2, however, shows that the share of insurance business written via direct channel strongly varies between countries. While it accounts for 52.2% in Croatia, it only accounts for less than 10% in Portugal or Italy. Moreover, the share of direct business within countries shows large variations over time. For example, in the Netherlands, the share of direct sales increased from 29.0% to 43.2% between 2004 and 2006, while in Croatia, it decreased from 64.8% to 52.2% between 2010 and 2017.[8] These strong variations between countries and within countries over time indicate that direct distribution structures differ depending on various factors, such as the regulatory environment, access channels or consumer-specific features of the different countries (Insurance Europe, 2021; Hilliard, Regan and Tennyson, 2013).

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[3] See Hilliard, Regan, Tennyson (2013) for a comprehensive literature overview.

[4] In Europe, in particular the Insurance Distribution Directive and the Packaged Retail and Insurance-based Investment Products (PRIIPs) Regulation impacted existing distribution structures.

[5] Direct distribution refers to the distribution of insurance products directly by insurance companies, in particular by telephone or via the internet.

[6] Based on a sample of countries which publish the share of the direct channel in the year 2017, including: France, Croatia, Luxembourg, Portugal, Spain, Italy, Belgium, Poland, Bulgaria, Slovenia,Czech Republic, Malta.

[7] See Rauch (2020) for a comparable research on the role of bancassurance sales in Europe.

[8] See Insurance Europe Insurance Industry Database (https://www.insuranceeurope.eu/insurancedata).

Table 2. *Distribution channels (% of GWP) in Europe (2017)*
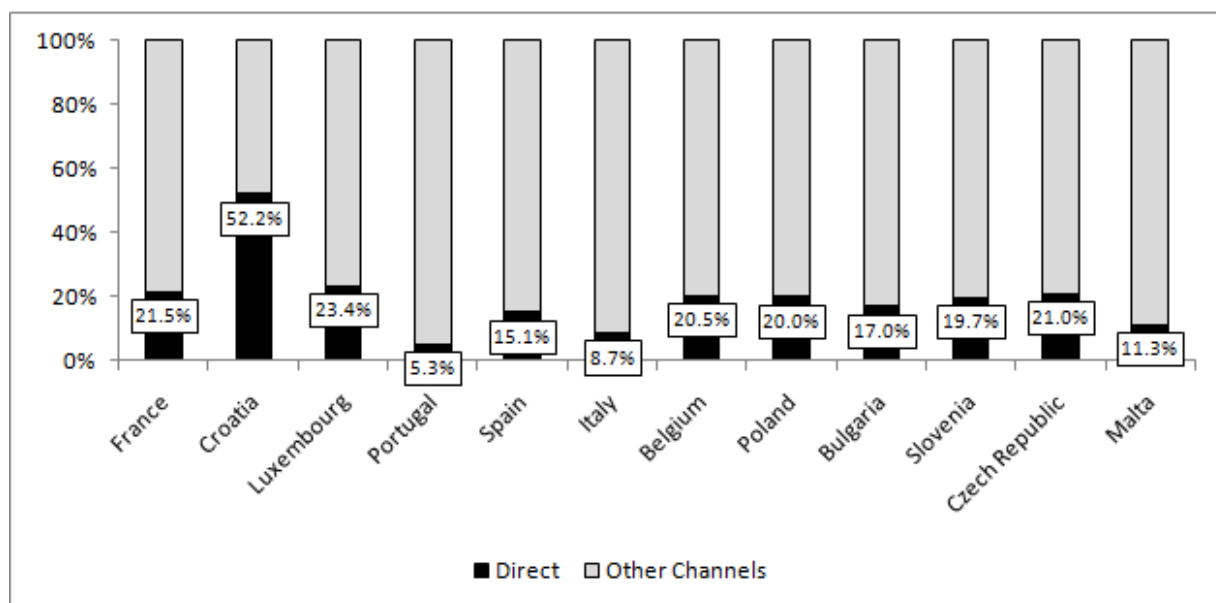
Notes: *The table shows the %-share of insurance gross written premiums of the direct channel (black) and all other channels (bright) for various European countries for the year 2017. The data is provided by the Insurance Europe Insurance Industry Database.*

Because distribution is a major success factor for insurance firms, various research papers have analyzed the relative efficiency (costs or profitability) of different distribution systems and the insurers' choice of distribution system(s) in light of the coexistence of different systems. For example, Joskow (1973) finds that expense ratios of insurers using the direct models are significantly lower when compared to insurers that use alternative distribution systems. Barrese and Nelson (1992) confirm these results using both linear and log-linear model specifications. Sass and Gisser (1989) show that firm and market size affect the insurers' decision to sell directly. Berger, Cummins and Weiss (1997) compare the direct-writer system and the independent-agency system in the property-liability-insurance industry and find that independent-agency insurers produce higher-quality outputs and are compensated by higher revenues. Rauch (2020) shows that the success of bancassurance activities in Europe strongly depends on various country level factors, in particular the customers' access channels to banking business and the insurance market development.

While the determinants and success of insurers' direct sales have been extensively analyzed at the firm level, research on country level factors that affect the amount of business written via direct channel is rare. This paucity can mainly be explained by the lack of data, as disclosure requirements vary widely, and most regulatory frameworks around the world do not require insurance firms to disclose their share of direct business. However, various studies (Rauch, 2020; Insurance Europe, 2021; Hilliard, Regan and Tennyson, 2013) suggest that the popularity of a distribution channel does not only depend on the product and the company, but also on country-specific factors like the regulatory environment and cultural characteristics. Indeed, related papers (Altuntas, Berry-Stölzle and Wende, 2015; Altuntas, Garven and Rauch, 2018) show that the capitalization and risk management activities of insurance firms are strongly affected by the environment in which they operate, indicating that such country level factors are relevant determinants of insurance firms' strategic choices. Given the strong variations between countries and within countries over time, an analysis of the determinants of the success of direct distribution at the aggregate, country level will provide additional, valuable insights for a variety of stakeholders. We therefore add to the literature a country level examination of factors that affect the amount of insurance business written via direct channel. In particular, we suggest that inter country differences in the *Customers' ability to understand insurance products*, the *Customers' access to insurance products* and the *Countries' regulatory environment* determine the success of insurance firms' direct sales activities.

The *Customers' ability to understand insurance products* is a major determinant of insurance demand, as insurance products can be quite complicated (Schlesinger, 2013). Insurance customers are severely challenged in terms of being able to understand the conditions of insurance contracts and to assess the

solvency of insurance firms (Klein, 2013), and therefore usually rely on adequate consulting. The direct channel is particularly challenging, as consumers do not receive advice from brokers or agents, but rather have to collect information on their target products by themselves. Depending on the complexity of products, this requires a certain experience and intellectual capacity to assess. We therefore assume that customers that are more experienced in handling insurance products are more likely to purchase insurance products via the direct channel, as they already gained insurance-specific knowledge from their existing products. We therefore formulate our first hypothesis as follows:

> *H1a: The share of business written via direct channel is higher in countries where customers are more experienced in handling insurance products*

Moreover, due to the complexity of insurance products, consumers that are more educated are more likely to purchase insurance products directly without prior consultation from a broker or tied agent, as they are more able to understand the calculations and conditions of insurance policies. We therefore expect that the level of formal education in a country determines the success of the direct channel:

> *H1b: The share of the direct channel is higher in countries with consumers that show a higher level of formal education*

With respect to the *Customers' access to insurance products,* we assume that the success of certain distribution channels depends on the possibility of consumers to access them. In particular, products that are sold via direct channel are increasingly sold online (Hilliard, Regan and Tennyson, 2013), hence access to the internet is an essential precondition for the success of this channel. We therefore formulate the following hypothesis:

> *H2a: The share of business written via direct channel is higher in countries where customers have better access to the internet*

In addition, the success of a distribution channel also depends on the possibility of consumers to access alternative channels. If suitable alternatives are available, potential customers might prefer them to the direct channel, as the purchase of insurance products via direct channel is associated with higher search costs. In Europe, a major access channel to insurance products is the banking channel (Rauch, 2020). In so called bancassurance models, consumers can purchase insurance products via banks, in particular while receiving advice for banking products.[9] Hence, we formulate the following hypothesis:

> *H2b: In countries with better access to banks, the share of business written via direct channel is lower*

Another important determinant for customers to access insurance products is their possibility to access insurance branches from their place of residence. In urban areas, the network of insurance branches is dense, as insurance firms and brokers prefer to establish branches in areas where they reach many potential customers. In rural areas, however, branches can be far away from the consumers' place of residence, which implies the use of alternative channels such as telephones or the internet. In other words, insurance customers in rural areas are more likely to purchase insurance via direct channel due to the burden to access alternative distribution channels, while inhabitants in urban areas can easily access insurance branches and are therefore less likely to purchase insurance products via direct channel. We therefore formulate the following hypothesis:

> *H2c: The share of business written via direct channel is higher in countries where the share of urban population is lower*

Finally, as the regulatory environment strongly affects the operations of insurance companies (Klein, 2013; Altuntas, Berry-Stölzle and Wende, 2015; Altuntas, Garven and Rauch, 2018), we assume that the share of direct distribution strongly depends on the *Countries' regulatory environment*. For example, the *Insurance Distribution Directive (IDD)* and the *Packaged Retail and Insurance-based Investment Products (PRIIPs)* regulation have recently impacted existing distribution structures in Europe (Hilliard, Regan and Tennyson, 2013). The success of such regulatory measures does not only depend on the policies itself, but also on the credibility of the government's commitment to such policies and its ability to properly implement regulations. Hence, we formulate the following hypothesis:

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[9] See Fiordelisi and Ricci (2012) for a comprehensive literature overview on bancassurance.

H3a: The share of business written via direct channel is higher in countries where the government is more effective

Moreover, purchasing insurance online or via telephone requires a high amount of trust in the counterparty, as the consumer does not meet a broker or agent in person and therefore has to be confident of contract enforcement. We therefore formulate the following hypothesis:

H3b: In countries with a higher degree of confidence in the rules of society and the quality of contract enforcement, the share of business written via direct channel is higher

In addition, apart from country-specific factors, various trends have affected insurance distribution in recent years and the direct channel in particular. In particular, ongoing digitalization and technological progress (Insurance Europe, 2021) have strongly affected the insurance sector. New competitors (start-ups) and technologies led to innovations in product design and improved interactions with customers. Alternative communication channels, such as social media, make choosing or buying insurance more efficient. Though this affected the insurance industry and its distribution channels in general, we assume that the direct channel has particularly benefited from these developments. Improved technologies have made the collection of insurance-specific information easier, hence leading to lower search costs when purchasing insurance via direct channel. In addition, the use of apps and smartphones facilitated direct communication with insurers. Therefore, in consideration of the ongoing digitalization and technological progress, we analyze if the importance of direct sales has been increasing in Europe in recent years (2010-2017) by comparing the share of direct sales in the recent decade with the preceding years (2005-2009):

H4: The share of direct sales in the European insurance industry has increased during the last decade when compared to the preceding years.

3. DATA AND METHODOLOGY

3.1. Data

Our analysis includes country level information on the share of gross written premiums written via direct channel from the European insurance industry database provided by Insurance Europe.[10] The database includes information on the different distribution channels for 32 European countries (including non-EU members). However, for the direct channel, the database includes missing information for various countries and years, leading to an initial sample of 170 country-year observations for the years 2005-2017. The data are then merged with country level data from various sources (The *World Bank's Worldwide Governance Indicators*, the *World Bank's World Development Indicators* and the *Insurance Europe-European Insurance Industry Database*). Due to the unavailability of several of those country level measures for some countries and years, our sample is further reduced, resulting in a final sample of 133 observations from 18 European countries for the years 2005-2017. The final sample includes EU members and non-EU members (Croatia, Switzerland and Turkey).

3.2. Methodology

In order to analyse the determinants of direct sales in the European insurance industry, we estimate the following fixed effects panel regression at the country level (i) of the following form for the years (t) 2005-2017:

$$Direct_{it}= \alpha + \beta CountryFactor_{it} + \delta CountryFE + \varepsilon_{it} \tag{1}$$

Where *Country Factor* denotes a vector of country specific factors that are expected to affect the share of direct sales,[11]*Country FE* are fixed country effects, and ε_{it} is the error term. *Direct* is the dependent variable, defined as the share of gross written premiums written via direct channel in country i in year t provided by the Insurance Europe Insurance Industry Database.[12]

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[10] See Rauch (2020) for a comparable analysis.
[11] We assume that other factors, such as the countries' cultural or legal features affect the success of direct sales activities (Hilliard, Regan, Tennyson, 2013). However, indicators to measure these factors are not available for the broad set of countries in our sample.
[12] Table 7 provides a detailed overview and description of all variables included in our analyses.

Country Factor includes two measures of the countries' *Customers' ability to understand insurance products*: *Density*, a measure of the amount of insurance premiums per inhabitant. We assume that more insurance premiums per capita indicate more experience in handling insurance products, which makes consumers more likely to purchase insurance directly instead of relying on advice from brokers or tied agents. The measure is provided by Insurance Europe and measures insurance premiums (GWP) per capita in € in the respective country. We assume that the share of business written via direct channel is higher in countries with higher levels of *Density* (H1a). In addition, we include *Education expenditure*, an indicator of countries expenses on education. We expect that higher expenses for education relate to higher levels of formal education, which enables consumer to understand the conditions of insurance contracts. The indicator is provided by the World Bank's World Development Indicators, and is defined as government expenditure on education in % of GDP. We assume that higher levels of formal education, measured by higher *Education expenditure,* lead to higher levels of direct sales (H1b).

To analyze the effect of the customers' *Customers' access to insurance products* on the success of direct distribution activities, we include measures of *Internet usage* (in % of population; Internet users are individuals who have used the Internet in the last 3 months) and *Bank branches* (commercial bank branches per 100,000 adults). We assume that a higher share of internet usage (H2a) and a higher density of bank branches (H2b) within a country increase the share of the direct channel. In addition, we add *Urban population,* a measure of the country's urban population in % of total population. We expect that the direct channel will be less popular in countries with a high share of inhabitants in urban areas, as insurance branches and brokers will be more easily accessible for people living in urban areas (H2c). All measures are provided by the World Bank's World Development Indicators.

Moreover, we include two measures of the *Countries' regulatory environment. Government effectiveness* reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. *Rule of law* reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement. Both indicators are provided by the World Bank's Worldwide Governance Indicators, and are measured in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5, where better scores indicate higher standards of regulatory quality. We expect that a higher degree of regulatory quality relates to higher shares of insurance premiums written via direct channel (H3a and H3b).

In addition, we test if the share of insurance business written via direct channel has changed in the recent decade when compared to the preceding years. We use a t-test to analyze if the differences in our variable of interest, *Direct*, between the recent decade (2010-2017) and the remaining years (2005-2009) is significant.[13] We assume that the share of the direct channel has increased in the recent decade (H4).

4. RESULTS

4.1. Descriptive Results

Table 3 provides the descriptive statistics for the years 2005-2017 for all countries in our sample. The table indicates that the share of insurance premiums written via direct channel amounts to 21.6% during this period, indicating the importance of this distribution channel in the European insurance sector. The share of direct distribution shows a large variation between countries, as it ranges from 1.1% to 84.0%, indicating that the relevance of direct distribution differs strongly between European insurance markets. The variation of the other variables illustrates the diversity of the countries in our sample, ranging from emerging countries to highly developed economies.

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[13] For robustness, we also conduct a Kruskal-Wallis analysis to examine differences between the recent decade and the remaining years. The results are not affected by the use of this methodology.

Table 3. *Summary Statistics*

Variable	Obs	Mean	Std. Dev.	Min	Max
Direct	133	21.6	15.0	1.1	84.0
Density	133	1,422.7	1,365.4	25.5	6,054.5
Education expenditure	133	4.8	0.9	2.8	7.9
Internet usage	133	64.0	16.4	18.2	97.4
Bank branches	133	45.7	21.1	14.1	104.3
Urban population	133	70.9	14.8	51.5	98.0
Government effectiveness	133	0.9	0.5	-0.4	1.9
Rule of law	133	0.9	0.6	-0.1	2.0

Notes: *The table shows summary statistics for the country level variables used in the regression analyses. The variables are defined in Table 7. All variable values are reported over the 2005 to 2017 time period.*

Table 4 provides the countries included in the sample, including the amount of observations per country and the mean of *Direct* for the years 2005-2017. The table illustrates the heterogeneous relevance of the direct channel in our sample, as it ranges from 6.6% (Portugal) to 84.0% (Switzerland).

Table 4. *List of countries in sample*

Country	Obs	Direct
Belgium	10	20.2
Bulgaria	9	22.1
Switzerland	1	84.0
Czech Republic	3	29.7
Spain	12	15.3
France	1	21.5
Croatia	7	61.1
Italy	13	8.8
Luxembourg	2	30.2
Malta	9	9.5
Netherlands	10	42.7
Poland	13	24.2
Portugal	12	6.6
Romania	4	19.1
Slovenia	13	19.2
Slovak Republic	9	22.8
Turkey	1	11.8
United Kingdom	4	12.1

Notes: *The table shows the amount of country-year observations (Obs) and the average share of direct sales (Direct) included in our sample for the period 2005-2017.*

4.2. Empirical Results

Table 5 provides the empirical results for our analyses. The results for all factors from equation (1) are included. All regressions are conducted for the years 2005-2017 and include fixed country effects.

Table 5. *Regression results: Impact of country level factors on direct insurance sales*

Dependant variable	Direct
Density	0.006***
	(0.002)
Eduction expenditure	3.750***
	(1.030)
Internet usage	0.169***
	(0.060)
Bank branches	0.048
	(0.082)
Urban population	-1.521***
	(0.532)
Government effectiveness	-6.239

	(4.202)
Rule of law	-5.826
	(5.343)
Constant	100.890***
	(37.454)
R^2	0.247
Adjusted R^2	0.079
Observations	133

Notes: *The table shows the results of regression analyses from equation (1) for all countries in our sample for the years 2005-2017. The dependant variable is the share of direct insurance sales (Direct). All regression analyses include country fixed effects. Country-level factors are described in Table 7. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.*

The results indicate that the countries' *Customers' ability to understand insurance products* strongly affects the share of insurance premiums written via direct channel, as both measures (*Density* and *Education expenditure*) are significantly positive at the 1%-level. This provides empirical support for hypotheses H1a and H1b. Insurance customers that have already spend more money on insurance products in the past (measured by *Density*) are more experienced in handling such complex products and are therefore more prone to purchase products via direct channel, as they rely less on detailed advice from brokers or tied agents. Similarly, a higher degree of formal education (measured by *Education expenditure*) enables customers to better understand insurance products, which increases their willingness to purchase them directly from insurance companies.

With respect to the *Customers' access to insurance products,* we find empirical support for hypothesis H2a, as the coefficient of *Internet usage* is significant and positive. This indicates that access to the internet is a major determinant of the success of direct sales, as insurance products that are sold via direct channel are increasingly sold online (Hilliard, Regan and Tennyson, 2013). Customers that use the internet are therefore more likely to purchase insurance directly. In contrast, we do not find support for hypothesis H2b, as the coefficient of *Bank branches* is not significant. Though Rauch (2020) finds that find that a higher density of bank branches within a country increases the share of the bancassurance channel, this does not affect the share of direct business written. With respect to hypothesis H2c, we find that a higher share of inhabitants in urban areas decreases the share of direct business written, as indicated by the significant and negative coefficient of *Urban population.* In contrast to inhabitants in rural areas, they can more easily access insurance branches from their place of residence, as the network of insurance branches in urban areas is usually denser, because insurance firms and brokers prefer to establish branches in areas where they reach many potential customers. Hence, insurance customers in urban areas are less likely to purchase insurance products via direct channel.

Moreover, we do not find empirical support that the *Countries' regulatory environment* affects the success of the direct channel, as both measures (*Government effectiveness* and *Rule of law*) are not significant. Hence, we do not find empirical support for hypothesis H3a and H3b. While the regulatory environment strongly affects the operations of insurance companies, for example their capitalization and their risk management strategy (Klein, 2013; Altuntas, Berry-Stölzle and Wende, 2015; Altuntas, Garven and Rauch, 2018), we do not find evidence that the share of direct business is affected by the regulatory environment. A possible explanation for this finding is that our measures of the *Countries' regulatory environment* rather explain the general regulatory conditions instead of insurance distribution-specific regulations.[14]

Finally, we do not find evidence that the share of direct sales in the European insurance industry has increased during the last decade (2010-2017) when compared to the preceding years (2005-2009). Table 6 shows that the mean of *Direct* in the recent decade (21.1%) is similar to the mean in the preceding years (22.6%). Moreover, the table shows that the difference between both means (1.5%) is statistically not significant, as indicated by a t-test. Hence, our results do not provide empirical support for our hypothesis H4. This is surprising, considering the ongoing digitalization and technological progress (Insurance Europe, 2021), that have strongly affected the insurance industry. However, insurance products are still complex for many customers, hence they still rely on adequate

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[14] Such measures are, unfortunately, not available for our analyses.

advice from brokers or tied agents. Moreover, such traditional channels have also improved their services with the help of digitalization and hence became likewise more attractive to costumers. Hence, while the direct channel has gained importance in various lines of business and countries, traditional channels remain highly important in the insurance sector. This diversity of channels, which makes it possible for insurers to adjust to the differing cultures, needs and preferences in individual markets, is in the interest of consumers (Insurance Europe, 2021; Hilliard, Regan and Tennyson, 2013).

Table 6. *Time trend: Differences between direct sales in the recent decade and the preceding years*

Variable	Obs	Mean	Std. Dev.	Min	Max
Direct (2005-2009)	52	22.6	17.4	2.8	84.0
Direct (2010-2017)	81	21.1	13.4	1.1	64.8
Diff		**1.5**			
Ho: Diff = 0					
Ha: Diff< 0	Pr(T < t) = 0.7134				
Ha: Diff != 0	Pr(|T| > |t|) = 0.5731				
Ha: Diff> 0	Pr(T > t) = 0.2866				

Notes: *The table shows the results of a t-test to test if the mean of Direct during the recent decade, Direct (2010-2017), differs from the mean of Direct in the remaining years, Direct (2005-2009). Diff denotes the differences between Direct (2005-2009) and Direct (2010-2017). The null-hypothesis of the t-test is that Diff equals 0.*

5. CONCLUSION

A wide variety of distribution methods is used by insurance firms, and the choice of the right distribution channel is a major success factor in the insurance industry. Hence, knowledge on factors that determine the success of a distribution channel provides valuable insights for managers of insurance firms. This research provides an analysis of country level factors that affect the share of insurance premiums written via direct channel for European insurance markets at the country level. In consideration of the ongoing digitalization and technological progress that have significantly affected the insurance industry, and in particular its distribution systems, we furthermore analyze if the importance of direct sales has been increasing in recent years.

Using a sample of 133 country-year observations for aggregate insurance markets from 18 European countries for the years 2005-2017, we find that the countries' *Customers' ability to understand insurance products* and the *Customers' access to insurance products* significantly affect the success of the direct channel, while the *Countries' regulatory environment* plays a subordinated role. Moreover, we find that the share of direct sales in the recent decade has remained stable when compared to the preceding years, indicating that other channels such as brokers and tied agents still play a major role in the insurance sector.

Our results are particularly valuable for managers of insurance firms, as they provide evidence on environments that determine the success of direct sales activities, in particular when entering new markets or designing growth strategies. In addition, they show that the share of direct sales remained relatively stable in recent years, hence showing the ongoing relevance of other channels such as brokers and tied agents in a changing market environment.

REFERENCES

[1] Altuntas, M., Berry-Stölzle, T. R., & Wende, S. (2015). Does one size fit all? Determinants of insurer capital structure around the globe. Journal of Banking & Finance, 61, 251-271.

[2] Altuntas, M., Garven, J., & Rauch, J. (2018). On the corporate demand for insurance: evidence from the global reinsurance market. Risk Management and Insurance Review, 21(2), 211-242.

[3] Barrese, J., & Nelson, J. M. (1992). Independent and exclusive agency insurers: a reexamination of the cost differential. Journal of Risk and Insurance, 375-397.

[4] Berger, A. N., Cummins, J. D., & Weiss, M. A. (1997). The coexistence of multiple distribution systems for financial services: the case of property-liability insurance. The Journal of Business, 70(4), 515-546.

[5] Fiordelisi, F., & Ricci, O. (2012). Bancassurance in Europe: past, present and future. Palgrave Macmillan

[6] Hilliard, J. I., Regan, L., & Tennyson, S. (2013). Insurance distribution. In Handbook of Insurance (pp. 689-727). Springer, New York, NY.

[7]   Insurance Europe (2021): European Insurance in Figures

[8]   Joskow, P. L. (1973). Cartels, competition and regulation in the property-liability insurance industry. The Bell Journal of Economics and Management Science, 375-427.

[9]   Klein, R. W. (2013). Insurance market regulation: Catastrophe risk, competition, and systemic risk. In Handbook of insurance (pp. 909-939). Springer, New York, NY.

[10]   Rauch, J. (2020). Bancassurance in the European Financial Sector: A Cross-Country Analysis. International Journal of Managerial Studies and Research (IJMSR), 8(12), 1-14.

[11]   Sass, T. R., & Gisser, M. (1989). Agency cost, firm size, and exclusive dealing. The Journal of Law and Economics, 32(2, Part 1), 381-400.

[12]   Schlesinger, H. (2013). The theory of insurance demand. In Handbook of insurance (pp. 167-184). Springer, New York, NY.

APPENDIX

Table7. *Country level factor's description and source*

Variable	Description	Source
Direct	The share of gross written insurance premiums written via direct channel in the respective country.	Insurance Europe
Density	Density measures insurance premiums (GWP) per capita in € in the respective country.	Insurance Europe
Eduction expenditure	Government expenditure on education, total in % of GDP: General government expenditure on education (current, capital, and transfers) is expressed as a percentage of GDP. It includes expenditure funded by transfers from international sources to government. General government usually refers to local, regional and central governments.	World Bank
Internet usage	Internet usage in % of population: Internet users are individuals who have used the Internet (from any location) in the last 3 months. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc.	World Bank
Bank branches	Commercial bank branches per 100,000 adults: Commercial bank branches are retail locations of resident commercial banks and other resident banks that function as commercial banks that provide financial services to customers and are physically separated from the main office but not organized as legally separated subsidiaries.	World Bank
Urban population	Urban population in % of total population: Urban population refers to people living in urban areas as defined by national statistical offices. The data are collected and smoothed by United Nations Population Division.	World Bank
Government effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	World Bank
Rule of law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	World Bank

Notes: *The table shows all firm and country level characteristics used in our analyses, including a detailed description of each variable and the source.*

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