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**UNDERINSURANCE AS A PHENOMENON
AMONG SELF-EMPLOYED PERSONS**

Do Finnish entrepreneurs consider their YEL pension
contributions sufficient?

ABSTRACT

Katrina Mäki-Soini: Underinsurance as a Phenomenon among Self-Employed Persons. Do Finnish Entrepreneurs Consider Their YEL Pension Contributions Sufficient?

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In Finland, social insurance is extensive and pension can be seen as its most important benefit. Social insurance for self-employed persons is resolved through YEL (Self-Employed Persons' Pensions Act). YEL payments of an entrepreneur are based on what is declared as their YEL-income earned through self-employment. The YEL-reform of 2022 shifts decision-making power from entrepreneurs to pension insurance companies for determining the YEL-subjected income. An increasing phenomenon of *underinsurance* was given as reasoning for the reform.

Despite the timeliness of the topic, there is a lack of research on the actual concept of underinsurance among self-employed persons. Consequently, this study focuses on conceptualizing the phenomenon. The purpose was to define underinsurance through legislative and financial perspectives, and then to assess whether the definition aligns with overall viewpoints of self-employed persons in Finland.

The researcher utilized secondary data in the form of an entrepreneurial survey conducted by Kantar Public / Suomen Yrittäjät in August 2022. The survey had a sample size of 1011, allowing for a quantitative research approach. The study consisted of using SPSS to retrieve simple descriptive statistics from the data. Bar charts were utilized to demonstrate the results.

Findings were grouped under three subsections to complement the theoretical framework. The first subsection presented statistics from a financial perspective. A key finding was that entrepreneurs tended to consider their YEL contributions sufficient prior to the YEL-reform. The second subsection presented statistics from a legal perspective. The YEL-reform appeared to be perceived as somewhat disincentivizing. The third subsection regrouped the 16 YEL-related questions into five categories. A connecting category emerged between the categories of freedom <-> security. Accordingly, statistics were presented in the third subsection from a preferential perspective of entrepreneurs regarding freedom versus security. Entrepreneurs seemed to generally favor autonomy over added security in issues of social security. Indeed, the self-employed could be summed up as underinsured but autonomously so, prior to the 2022-reform. Based on the overall results of the study, it appears that legally enforcing the definition of underinsurance does not align with the viewpoints of entrepreneurs.

The findings demonstrate the complexities surrounding a commonly simplified concept. Decision-makers and other partakers in the ongoing discussion can benefit from a more informed approach when it comes to the issue of underinsurance. This study helps to enrich that approach.

Keywords: Entrepreneur, Self-Employed, YEL, Pension, Underinsurance

The originality of this thesis has been checked using the Turnitin Originality Check service.

*This thesis is dedicated to my favorite sister-in-law, Siiri,
and my beloved nephew, Kaarlo Olavi Giovanni.*

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1. INTRODUCTION

1.1. Research Background

In 2022, a reform was proposed by the Finnish government to the Parliament of Finland regarding the Self-Employed Persons' Pensions Act (henceforth abbreviated *YEL*, as the literal translation comes from the Finnish '*Yrittäjien eläkelaki, YEL*'). The objective of this reform was to increase YEL payments to more appropriately match the level of work of an entrepreneur throughout his or her self-employment. According to the government of the time, the need for the reform was partly due to the current situation of self-employed persons increasingly underinsuring themselves. The concept 'underinsurance' was used to describe situations in which one's reported YEL-income did not match one's actual labor input and income streams. (HE 102/2022).

The number of entrepreneurs in Finland has ranged from approximately 330 000 – 340 000 for several years (Pärnänen, 2022), most recently decreasing from 328 000 total in 2022 to approximately 320 000 total in 2023 (Statistics Finland, 2024a). The total number of pensioners was over 1.6 million in December 2022, with self-employed persons accounting for nearly 17% (N=276 713) (Budget Proposals of Ministry of Finance, 2024). Approximately 1/3 of entrepreneurs have been estimated as paying the lowest possible amount of YEL in 2022 prior to the reform (Finnish Centre for Pensions, 2023a). The below table shows the aggregate funding (in percentages) of the state towards YEL pensions over the past 10 years. As evidenced, from 2014 to 2023, the state's contribution percentage has increased from 1.4% to 10.2%.

Table 1. YEL payment percentages

Year	YEL payment (%)	State's contribution (%)	Total, YEL (%)
2023	23.2	10.2	33.4
2022	23.2	8.4	31.6
2021	23.1	8.1	31.2
2020	23.1	7.6	30.7
2019	23.2	6.4	29.6
2018	23.1	5.3	28.4
2017	23.1	4.1	27.2
2016	22.6	3.0	25.6
2015	22.6	1.7	24.3
2014	21.8	1.4	23.2

Source: Pension Act Service (2025)

The resulting current situation is a government-sponsored deficit approximating €500 million in 2023 (Finnish Centre for Pensions, 2023b). This makes the issue of insurance of entrepreneurs both timely and relevant to many.

On one hand, a certain level of flexibility and autonomous risk preparedness could be considered inherent to the very nature of entrepreneurship. By foregoing traditional employment, self-employed persons choose a career path of more risk and more autonomy (Kettunen, 1985). Particularly sole entrepreneurs and those who opt for seasonal business endeavors with fluctuating income streams likely benefit from some degree of flexibility when it comes to YEL payments (Suomen Yrittäjät in Working Report of STM, 2019). On the other hand, the welfare state model of Finland is extensive, encompassing all its citizens in its mandatory pension scheme (Havakka et al., 2017). This entails that self-employed persons will inevitably benefit from the pension scheme upon retirement. Thus, it would seem reasonable to necessitate participation of self-employed persons, to some degree, in the pension fund accumulation through their YEL payments. Additionally, YEL provides social insurance – or, *should* provide, the actualization of which is an interesting question beyond the scope of this study – to self-employed persons during their years of employment, before pension.

The proposed YEL reform met with resistance, with a petition being signed by 67 000 people to protest the change (Hanén, 2022). Nonetheless, the reform came to pass, albeit slightly adjusted, in January 2023. Following the reform, the current 2023-established government has carried out an adjustment to YEL, which did not alter this particular reform. Upcoming governments will continue to determine how to proceed with the actualization of this reform as well as further development of YEL, making this a relevant topic. In Finland, the increase of growth entrepreneurship has long been considered preferable (Hyrkkänen, 2009). The capability and desire of Finnish companies to pursue growth depends on the conditions in which they operate, as is evidenced through historical review (Jensen-Eriksen, 2023). It can therefore be valuable to predict the potential impact of legislative reforms such as this one on entrepreneurship.

Additional timeliness to the topic comes from the ongoing overall assessment of YEL, per request of the current government. This inspection is being carried out by Dr. Jukka Rantala, with the purpose being detecting alternatives for improving the pension system of entrepreneurs. (Finnish Government, 2024). A key angle of the assessment by Dr. Rantala pertains to the issues of determining YEL-income (Finnish Government, 2024), the insufficiencies of which led to the original 2022-reform (HE 102/2022). The author of this thesis aspires to hone in on the reasoning for the reform – underinsurance, resulting from inadequate YEL-income declarations – as the focus for this study.

1.2. Research Objective and Research Question

The relevance for this thesis comes from simplified use of the term ‘underinsurance’. Previous studies tend to use phrases such as “underinsurance occurs...” or “underinsurance means that...” somewhat matter-of-factly, without analyzing the term itself. Consequently, the objective of this study is to first of all problematize simplification of the concept. As this research intends to demonstrate appreciation for the complexity of the subject, exhaustive defining of the concept is considered self-contradictory. Rather, the researcher intends to present a tentative definition through the theoretical framework. This will then be operationalized through entrepreneurial perspectives via descriptive statistics. In other words, the concept of underinsurance will be defined utilizing legislation and financial implications thereof. Then the survey data on entrepreneurs will be utilized to assess whether their viewpoints align with enforcing the legal definition of underinsurance.

The **research question (RQ)** is therefore the following: Does enforcement of legal and financial definition of underinsurance among entrepreneurs align with the outlook of self-employed persons in Finland?

The writer acknowledges that the challenges within YEL are many and will not be resolved easily. Ambiguity arises regarding solutions. Politicians veer between necessitating higher contributions and higher coverage through mutual pension funds, or increasing investment opportunities and overall appeal of entrepreneurship to generate economic growth. Both approaches can be reasoned as ultimately seeking to provide for the self-employed persons in Finland, demonstrating the complexity of the matter. That being said, the intention of this study is to shed light on the ambiguities regarding the premise of underinsurance, in order to hopefully foster more informed conversation on the matter.

1.3. Limiting the Scope

Certain key limitations of the scope of research should be noted regarding this study. Firstly, the survey data by Kantar Public (now *Verian Group*) / Suomen Yrittäjät (*Federation of Finnish Enterprises*) pertains to small- and medium-sized business entrepreneurs. This excludes entrepreneurs of major corporations. Secondly, the survey data is limited to Finnish respondents (N=1011), and the study has been conducted at a given point in time (August 18th–25th, 2022), omitting the additional potential benefits of longitudinal studies. The researcher of this thesis has additionally limited the empirical analysis to those respondents whose entrepreneurship is full-time

(excluding those who are part-time entrepreneurs) and who are YEL-insured (excluding those who are MyEL-, JuEL-, or TyEL-insured). These limitations are elaborated on in conjunction with the study itself.

Secondly, out of the various forms of insurance available to entrepreneurs in Finland (see Salonen et al., 2020, pp. 30–31), the focus of this thesis is on YEL pension. Naturally, as YEL is the structure through which the insurance of entrepreneurs has been primarily resolved in its entirety (Benzarti et al., 2020), the benefits included within it extend beyond those relating to pension. These are elaborated on in the theoretical chapters. However, to keep the research focus sufficiently narrow, the scope of the study has been limited to the pension dimension of YEL. Furthermore, the scope is limited to operationalizing the concept of underinsurance among Finnish entrepreneurs when it comes to their YEL pension contributions.

That being said, the practical application of the results is limited to the unique Finnish YEL legislation and pension system. However, the idea of better understanding underinsurance as a phenomenon can and should be considered beyond Finnish borders, so perhaps this thesis can contribute to research inspiration in a broader context as well.

1.4. Previous Studies

As mentioned, a lack of research on the subject of underinsurance among self-employed persons constitutes the very purpose of this thesis. Nonetheless, several previous studies have been utilized in developing the theoretical framework. These include reports by the Finnish Centre for Pensions, peer-reviewed articles on insurance theory and entrepreneurship, and other such research. The following studies can be considered some of the most relevant sources for this thesis.

Einav and Finkelstein's (2011) article "Selection in Insurance Markets: Theory and Empirics in Pictures" utilizes a graphical framework the authors developed to explore the concept of selection within insurance markets. Concepts from the study such as adverse and advantageous selection are referred to by the author of this thesis in the section on insurance theory. Moral hazard and other behavioral elements are referred to in the section on psychological factors. Secondly, the report "Self-Employed Persons in Finland" by Pärnänen and Sutela (2020) from Statistics Finland is used as a source for this thesis. Pärnänen and Sutela's (2020) report summarizes the results of their 2017-survey on self-employed persons. Themes such as structure and demographics of the self-employed are

reviewed at length in the report. These have been referred to in this thesis when describing self-employment and the Finnish pension scheme.

Out of the previous research utilized for the theoretical framework, the study by Salonen et al. (2020) is perhaps most directly related to this thesis. Salonen et al. (2020) investigate the concept of underinsurance in their article “The risk of under-insurance in the Finnish statutory pension scheme for self-employed workers: A trajectory analysis”. Dimensions of the article utilized in this thesis include demographics of the self-employed, psychological aspects related to insurance decisions, and categorization of insurance outcomes. A fourth example of previous research is the report “Development of the employee pension security of self-employed persons” (Ministry of Social Affairs and Health, Working group report, 2019). This report reviews the pension scheme for self-employed persons with the purpose of developing alternatives to improve issues such as underinsurance. It is referred to in this thesis in the section discussing YEL.

In addition to scientific research, the topic of underinsurance has been incorporated in theses by other graduate students in the field of Insurance and Risk Management. These include but are not limited to the following: personal risk management of entrepreneurs (Haverinen, 2015); entrepreneurs’ preparedness for risks and overall views on pension scheme (Hanninen, 2020); and sustainability of YEL (Kosonen, 2020). Additionally, theses from other fields have honed in on the theme of underinsurance. These, in turn, include: the relationship between lack of knowledge of entrepreneurs and underinsurance among entrepreneurs (Koski, 2019); reasoning behind underinsurance among entrepreneurs (Toivakka, 2023); and possible effects of 2022-reform to YEL (Huttunen, 2023). However, given the timeliness of the topic of underinsurance among the self-employed, there is a surprising lack of research on the actual concept itself. What constitutes underinsurance among entrepreneurs, legally and financially speaking? Does the definition align with their views on entrepreneurship? Herein lies the research gap to which this thesis contributes: investigation of the **concept** of underinsurance, firstly from a legal, financial and psychological perspective, secondly through the experience of entrepreneurs.

This thesis differs from each of the abovementioned theses in its analysis methods, research focus, or both. Some of the studies utilized a qualitative (Huttunen, 2023; Kosonen, 2020) or primarily qualitative (Toivakka, 2023) approach; this thesis incorporates descriptive statistics for the empirical section. As for differentiated research focus, others have focused on assessing reasons for underinsurance (Toivakka, 2023), the effect of social security knowledge on current insurance situation (Koski, 2019), and preparedness for risks in light of opinions on YEL (Hanninen, 2020).

This thesis, in turn, focuses on the concept of underinsurance itself, with the purpose of understanding its essence in light of financial and regulatory frameworks as well as entrepreneurial preferences. Finally, where Huttunen (2023) similarly hones in on the 2022-reform, assessing its effects, this thesis includes the reform as a starting point for the broader phenomenon in question – i.e., underinsurance.

1.5. Theoretical Framework

The theoretical framework of this study is illustrated in the figure (Figure 1) below. The purpose is to conceptualize underinsurance by collating research on entrepreneurship, insurance theory, and Finnish legislation. The subsequent empirical study consists of a descriptive analysis endeavoring to operationalize the concept of underinsurance by comparing it to the perspective of entrepreneurs. The structure and content of the theoretical framework is explained in the following section.

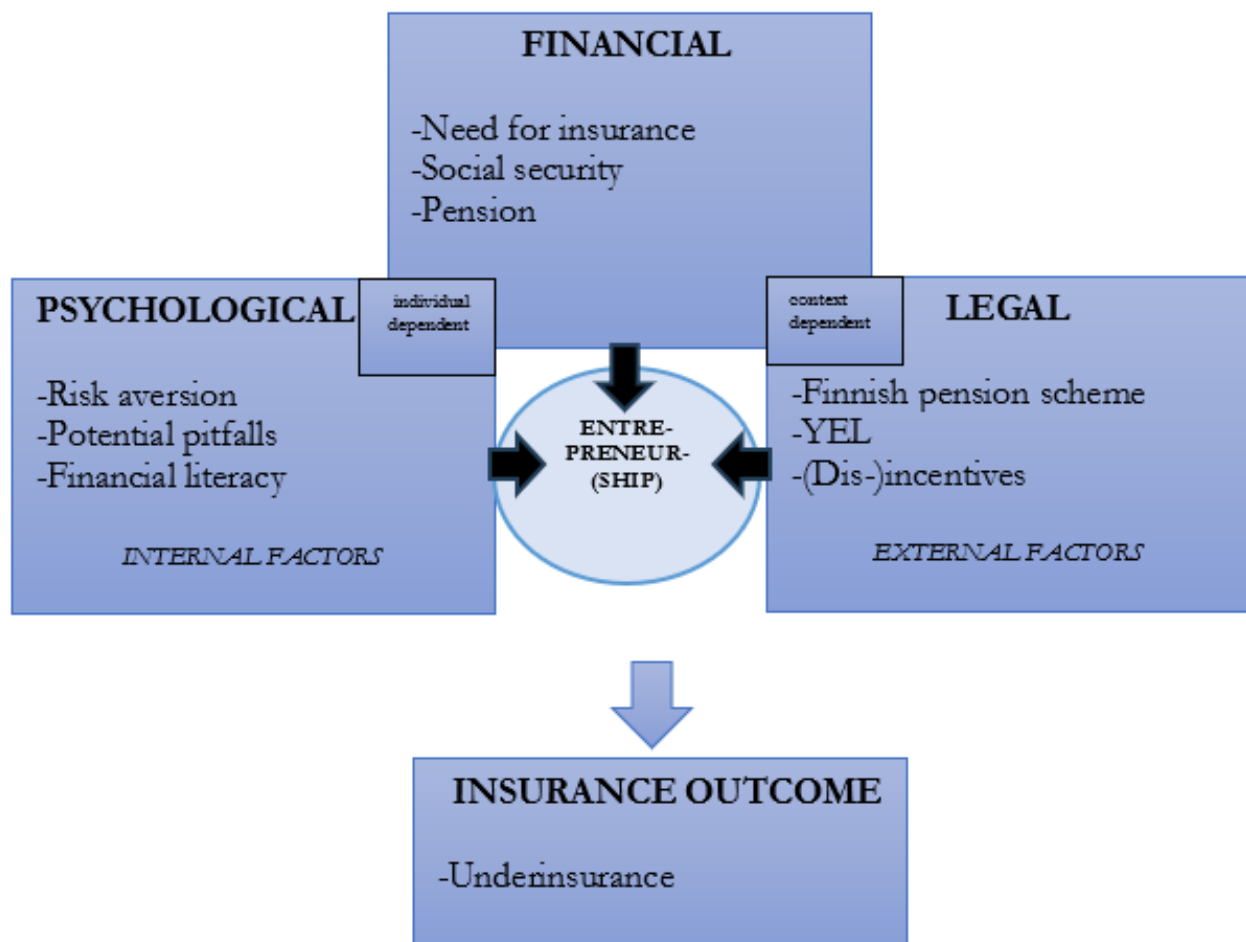


Figure 1. Theoretical framework of the study

As the concept of underinsurance is construed of multiple dimensions (see above figure), and in order to keep the literature review concise, the researcher has not delved exhaustively into each concept. Rather, the key issues have been touched on and their placement within the theoretical framework examined with additional sources included for further reference. The researcher acknowledges the brevity of the literary reviews on individual dimensions of the theoretical framework. However, with a topic that has yet to be properly conceptualized, it was considered critical to introduce all key concepts rather than offer more detailed analyses on merely a couple of them.

Self-employed persons are posited as the focal point of the theoretical framework, as this study aspires to understand their position on matters related to their (under-)insurance outcome. Entrepreneurship can be seen as an alternative path to wage earning, a path that contains more freedom as well as more risks than traditional employment. Putting oneself on the line inheres in self-employment as, ultimately, entrepreneurs are responsible for their livelihood. (Kettunen, 1985; Sutinen & Antikainen, 1996). To mitigate risks of financial loss, entrepreneurs are included in the general social security system of Finland (Finnish Constitution, 11.6.1999/731, section 19, subsection 2), which offers basic coverage to all individuals in cases of financial loss, as well as in the mandatory Self-Employed Persons' Pensions Act (YEL), which provides social insurance and pension coverage to the extent of one's contribution payments (Rantala & Pentikäinen, 2003; Salonen et al., 2020). In Finland, the insurance level of entrepreneurs is determined based on their own YEL-declared income (Pärnänen & Sutela, 2020, pp. 111–113). Prior to the 2022-reform – elaborated on later – , the declaration of YEL-subjected income was up to the entrepreneur, with the reform shifting decision-making power to the Finnish Centre for Pensions. The purpose of the reform was, among other things, to reduce underinsurance (HE 102/2022).

Next, elements constituting the eventual outcome of an entrepreneur's insurance have been divided into categories of psychological, financial, and legal. The visual overlap between the 'boxes' demonstrates the interwovenness of categories. The *legal* and *psychological* 'boxes' have intentionally been positioned on a lower level than the *financial*. This is to visualize financial factors – need for insurance, development of social security – as the driving force for insurance. The legal and psychological aspects are then thought to form the contexts within which this need for insurance is realized for entrepreneurs, all resulting in the eventual outcome of insurance.

While psychological factors and legal factors are here considered individual-dependent (internal) and context-dependent (external), respectively, financial factors carry traces of both. On one hand, social security and pension (coverage ranging by country from virtually nonexistent to high coverage,

making these context-specific) are legislative by nature, causing the overlap between the boxes “financial” and “legal”. On the other hand, a person’s individual-specific need for insurance and personal financial circumstances partly trace back to psychological tendencies. This causes the overlap between the boxes “financial” and “psychological”. Additionally, the collective demand for an actualization of insurance has financial implications on a national level – and vice versa –, intertwining the categories “financial” and “legal” even further. The arrows pointing from the three ‘boxes’ to the center circle of entrepreneurship, and, consequently, the arrow from entrepreneurship to insurance outcome, demonstrate the various facets affecting the eventual insurance outcome.

Pension can be considered the most pivotal provision of social insurance for individuals (Salonen et al., 2020, p. 26), which is why this has been separately mentioned under financial aspects in the framework, alongside social security and an individual need for insurance. At this point, it is important to note that in this study the scope of pension legislation for entrepreneurs has been limited to YEL. This excludes the agricultural entrepreneur pension scheme of MyEL. Justification for this is provided further in chapter three with a brief presentation of MyEL included nonetheless.

Underinsurance, as will be evidenced, is a possible outcome of insurance for self-employed persons. This is visualized in the framework with an arrow leading to it from entrepreneur(ship). Alternative outcomes include adequate or over-insurance. (Salonen et al., 2020, p. 29). The core theme of this study is to methodically examine the concept of underinsurance. This is done by problematizing its prior simplification, defining it from a legal and financial perspective, and aspiring to understand it from an entrepreneurial perspective through survey data. At this point, it is perhaps warranted to reveal that the survey data assessed does not explicitly mention the word “underinsurance”. However, the questions utilized provide an appropriate premise for systematically drawing preliminary conclusions relating to underinsurance. This will be elaborated on in the methodology chapter.

The internal and external factors included under the psychological and legal categories in the theoretical framework establish the potential explanatory factors as to *why* underinsurance occurs. (Dis)incentives are expressly mentioned as an external legislative factor alongside YEL due to the potential undesired effects incentives can have on individuals. An example of this would be an entrepreneur electing to minimize insurance, admittedly underinsuring him- or herself. This could be due to a lack of financial appeal of maximized insurance or due to it simply seeming financially unprofitable to allocate one’s limited funds towards future financial risks via insurance. This would then indicate a disincentive in the legislative structure of YEL if, indeed, it were unprofitable to opt for adequate insurance.

On the other hand, since entrepreneurs are affected simultaneously by both internal and external factors, forgoing an adequate level of insurance may trace back to psychological pitfalls, such as myopia. An *inadequate* level is expressed here to refer to cases in which an entrepreneur, in hindsight, would agree that they were not properly insured against a financial risk and should have opted for more insurance. Incentives may be appropriately adjusted to do away with the disincentivizing effect, yet underinsuring oneself may still be the outcome of an entrepreneur's insurance decisions. This might be due to a lack of information or financial understanding regarding the YEL system. As will be evidenced through the literature review, YEL and the need for social insurance are closely intertwined. In a country such as Finland, individuals are, no matter what, included in the social insurance system. This creates an additional link between concepts regarding the unsustainable equation of a lack of YEL payments and simultaneous coverage even for individuals who have not contributed into the YEL fund sufficiently.

Assessing the weight of the individual factors of this theoretical framework is beyond the scope of this study. Individuals differ in their composition of psychological factors (such as risk aversion), susceptibility to pitfalls and incentives, as well as extent of financial knowledge and personal financial resources. Naturally, the factors included in this theoretical framework are not considered exhaustive. However, the abovementioned concepts emerged in key literature enough to be included as relevant for this study. The essence of the matter is that these factors all play a role in an entrepreneur's decisions regarding his or her financial security. This leads to an eventual outcome of what is currently considered under-, appropriate level, or over-insurance.

1.6. Definitions of Pivotal Concepts

To conclude the introduction, definitions for crucial concepts are provided. These include a working definition for 'underinsurance', as well as other key concepts utilized in this study. The definitions are intended to facilitate absorption of the literature review in chapters two and three.

Firstly, *self-employment* denotes working in one's own firm (which includes the option of freelancing and working as an independent professional) or taking part in a company as a business partner (Salonen et al., 2020, p. 26). The Finnish YEL defines self-employed persons as persons whose gainful occupational activities are absent of employment relationship, public service relationship or office relationship. Furthermore, YEL stipulates that only individuals who are between 18 and 70 years of age, whose earned income accumulates to a certain – subject to change – amount per year

and whose entrepreneurial activities have continued for at least four consecutive months are considered self-employed. (Finlex, 2024a). In 2024, the amount of annually earned income was to accumulate at least €9010.28 for a person to be regarded as self-employed (Finnish Centre for Pensions, 2024a). Self-employed persons who do not fulfill the abovementioned prerequisites are automatically included in the *TyEL* (*työntekijän eläkevakuutus*) structure, similarly to regular wage earners (Benzarti et al., 2020, p. 259). In this thesis, the terms “entrepreneur” and “self-employed person” are applied interchangeably. Both are used to signify “yrittäjä” (entrepreneur), the only term used in Finnish legislation (Finlex, YEL, 1272/2006) when referring to the self-employed.

Another key concept to define at this point is the scope of the statutory *YEL insurance* among self-employed persons in Finland. The social security system in Finland covers all its residents to a relatively high extent (Buchholz, 2021). In the case of entrepreneurs, their social insurance has been primarily resolved through YEL (Benzarti et al., 2020, p. 258). As for agricultural entrepreneurs and science or art grant recipients, their equivalent mandatory social insurance is MyEL. YEL or MyEL is the only mandatory insurance that self-employed persons in Finland are to insure themselves with – apart from possible industry-specific, required insurances. (Ilmarinen, 2022). The YEL income (i.e. pension-declared income) of self-employed persons is used to calculate qualification for various social security payments from the common social security system of Finland. These include paternity / maternity, sickness, housing, and unemployment benefits. Additionally, YEL insurance offers coverage in the cases of spousal death, permanent disability, and old-age retirement. (Salonen et al., 2020, pp. 30–31).

This thesis endeavors to operationalize the issue of underinsurance among entrepreneurs in Finland. As the purpose is to problematize frequent simplification of the term, an exhaustive definition of underinsurance is considered neither appropriate nor feasible. However, for purposes of clarification, the term is next deciphered sufficiently to provide a working definition. In a strictly semantic sense, ‘underinsurance’ implies an inadequate level of coverage on the part of an individual for withstanding risks of financial loss or decline (Lavarreda et al. 2011; Cervellati, et al., 2019). For self-employed persons operating within the Finnish YEL framework, the term is utilized to refer to the gap bridging what is reported as YEL earned, i.e. pension-declared, income and the actual income subjected to tax (Salonen et al., 2020; Hyrkkänen, 2009). The ambiguity of the concept of underinsurance is elaborated on in the theory chapters.

1.7. Structure of Thesis

This thesis is divided into six chapters. Chapter one provides the research context and justifies the need for this specific study, distinguishing it from previous studies in the same field. The research objective and research question are provided, along with limitations of the scope. The chapter then provides the theoretical framework for conceptualizing insurance of entrepreneurs. This is followed by definitions of key concepts.

Chapters two and three constitute the literature review of this thesis. Each dimension of the theoretical framework is examined. These chapters have been structured so that chapter two focuses on entrepreneurship and insurance theory, establishing the context of insurance of the self-employed. Chapter three then proceeds to evaluate external (Finnish pension scheme, YEL, disincentives), as well as internal (psychological, financial literacy) factors affecting entrepreneurs in their insurance decisions. Chapter three concludes with a section on insurance outcomes, tying the theoretical framework together. Chapters two and three are intended as the context within which the empirical analysis can meaningfully be conducted.

The fourth and fifth chapters cover the empirical section of the thesis. Chapter four introduces the research method, which in this case constitutes a simple quantitative analysis in the form of descriptive statistics. The philosophy behind the method is presented, along with detailed descriptions of the data collection and the data itself. The data consists of a survey conducted in 2022 by Kantar Public / Suomen Yrittäjät on self-employed persons. Ethical considerations and a critical evaluation of the study are provided at the end of chapter six.

Chapter five proceeds with the data analysis. The themes in the study have been arranged under subheadings derived from the theoretical framework: Yel contributions, Disincentives, and Regrouped questions. Each subheading precedes the descriptive analysis, results, and discussion of said theme. The results are evaluated within the theoretical context formed in chapters two and three.

Chapter six provides the conclusions of the study. The research question is responded to, and the reliability of the study is evaluated. The meaningfulness of the thesis in the research on insurance of the self-employed is assessed, and recommendations for further research are provided.

2. CONCEPTUALIZING INSURANCE WITHIN ENTREPRENEURIAL CONTEXT

As evidenced in Figure 1, the dimensions establishing the insurance outcome of entrepreneurs can be grouped into categories of financial, legal, and psychological factors. Chapter two begins with an overview on self-employment from both a general and Finnish perspective. The chapter proceeds to examine the concepts included in the financial category (see Figure 1) of the theoretical framework. These include the overall need for insurance and the development of social security and pension in Finland into the current context of today.

2.1. Examining Self-Employment

Although the data for the study of this thesis is specifically comprised of entrepreneurs of small and medium-sized enterprises, the theoretical foundation of self-employment has been extended to self-employed persons in general. This is justified by the fact that statutory matters pertain to entrepreneurs irrespective of the size of their enterprises. Additionally, some of the previous literature on self-employed persons keeps the scope at a more general level instead of specifying a particular group of entrepreneurs.

For instance, in their review (for the Finnish Centre for Pensions) of statutory social security for self-employed persons in Europe, Knuuti and Vidlund (2006) acknowledge that their assessment has been kept at a general level due to the difficulty of obtaining comparable data between countries. These authors were still able to draw meaningful conclusions from their findings relating to underinsurance and social security coverage overall. This potential limitation should be kept in mind when interpreting the findings of this study: although the overall topic pertains to self-employed persons universally, the scope for the empirical study has been limited to small and medium-sized enterprise entrepreneurs in Finland.

Additionally, much of the literature constituting the theoretical background originates from other countries, such as the United States. This may call into question the generalizability of the study results. Nonetheless, the appropriateness of utilizing international research due to a lack of Finnish research on the matter has been verified with several credible entities. Accordingly, the peer-reviewed articles assessed for the theory chapter have been deemed applicable.

2.1.1. The Nature of Entrepreneurship Universally

Described as the driving force of (economic) development, entrepreneurship is considered a significant component in modern economies (Benzarti et al, 2020). Benzarti et al. (2020) bring up the United States as an example, where approximately 20% of gross job creation is due to creation of new businesses (Decker, 2014, p. 8; as cited by Benzarti et al., 2020, p. 255). Merely honing in on the amount of entrepreneurial activity can be misleading. For instance, the GEM (Global Entrepreneurship Monitor) has detected a U-shaped relationship when it comes to GDP per capita and entrepreneurial activity, with, in fact, developing countries being the “most enterprising” nations. (Knuuti & Vidlund, 2006, p. 12). According to the findings of GEM, Knuuti and Vidlund (2006, pp. 10–12) point out that entrepreneurial activity initially decreases as the national product rises. Once GDP per capita exceeds the lowest point reached of the U-shape (€25 100 per capita GDP), the level of entrepreneurial activity in countries begins to grow steadily along with the GDP (Knuuti & Vidlund, 2006, p. 12). Relevant factors to consider when assessing the impact of entrepreneurship on an economy include job creation, innovativeness, and economic contribution (Neumann, 2021). At any rate, the desire, in Finland has been to increase growth entrepreneurship (Hyrkkänen, 2009, p. 5).

At their core, entrepreneurs are viewed as pioneers, daredevils of sort, who opt for the chance to generate wealth over the moderate security afforded by regular employment in companies (Goffee & Scase, 1987, p. 1; as cited by Blanchflower & Oswald, 1998, pp. 26–27). Entrepreneurship entails a certain lack of predictability regarding one’s future earnings (Hyrkkänen, 2009, p. 34). Ekelund et al. (2005) detect a potentially causal relationship between lower risk aversion and opting for self-employment among Finns. According to the OECD (2017), the overall trend of late among their member countries is an increase in the quantity of part-time-working, self-employed individuals. The trend is particularly evident in Finland, where self-employed individuals who work part-time accounted for approximately 29% of all self-employed individuals in 2016. (OECD, 2017; as cited by Salonen et al., 2020, pp. 26–27).

Entrepreneurship entails certain attributes that can be described as fundamental. Self-employed persons must take initiative in their work, bear the full responsibility of their career, as well as ultimately hold decision-making power in their endeavors. (Kettunen, 1985, p. 15). One’s tolerance for uncertainty and risk and willingness to be proactive can be enhanced by personality traits. Indeed, certain characteristics have been associated with entrepreneurs. These include self-esteem, assuredness, and a propensity towards self-enhancement. (Miller, 2015). Kettunen (1985) discusses the research-proven prerequisites to becoming a successful entrepreneur. These include a business

idea and access to both the market, as well as the required (financial) resources to carry out the idea; skill in one’s trade; and faith in one’s idea, which shows itself as resolution and self-confidence (Kettunen, 1985, pp. 15–16).

Setia (2018) detects a correlation between conscientiousness (as one of the dimensions of the Big Five model for assessing personality traits) and successfulness among entrepreneurs. An ambiguous term at first sight, *successfulness* among entrepreneurs is measured through self-assessment via a Likert scale in Setia’s (2018) study. Additional personality traits that have been associated with entrepreneurs include a sense of control arising from within, as well as achievement orientation and a desire for self-determination (Miller, 2015).

2.1.2. Statistics on Enterprises and Entrepreneurs in Finland

Certain statistics are provided next to preface the following section on self-employment in Finland. A figure depicting the number of closures and openings of enterprises is included, as well as one depicting the current stock. Likewise, a figure depicting the number of entrepreneurs is included. When assessing impacts of reforms such as the previously discussed 2022-reform of YEL, these types of indicators can be useful. However, caution must be exercised in drawing inferences from them, as there are numerous other variables to take into consideration when conducting analysis on reforms. Firstly, the following figure (Figure 2) from Statistics Finland demonstrates the trend in the amount of enterprises opened (blue bar) and closed (orange bar) over the past 10 years.

Enterprise openings and closures - Revisions by Information and Quarter. Latest release.

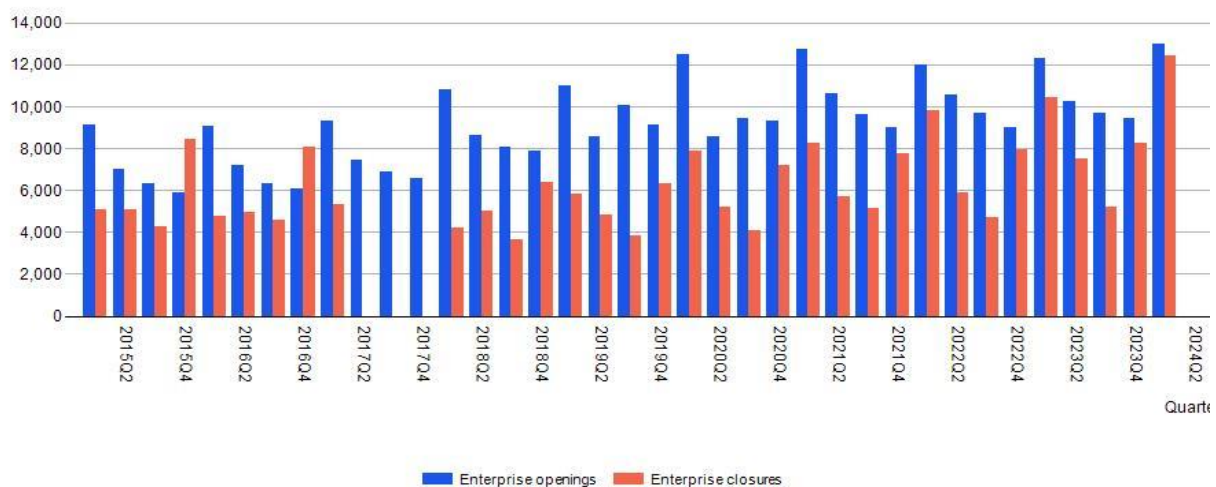


Figure 2. Closures and openings of enterprises. Source: Official Statistics of Finland (2024a)

At first glance, it could appear tempting to interpret that the amount of closed enterprises has increased in conjunction with the 2022-reform. However, there are many factors to consider. The below statistic (Figure 3) reveals that the enterprise stock has nonetheless continued to grow overall.

Stock of enterprises, enterprise openings and closures by Quarter. WHOLE COUNTRY, Stock of enterprises.

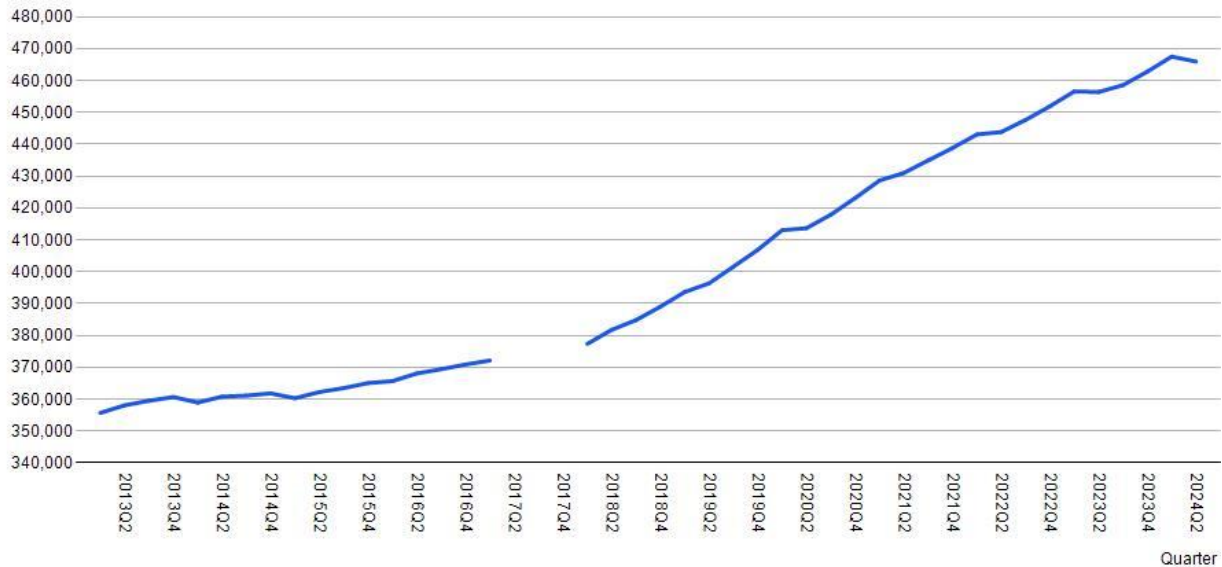


Figure 3. Stock of enterprises. Source: Official Statistics of Finland (2024b)

Finally, the below figure (Figure 4) demonstrates the number of self-employed persons. We see that the trend of self-employment has been declining since 2021; however, similar drops have occurred in 2017, and 2010. As evidenced, the number of entrepreneurs began to drop *prior* to the execution of the YEL reform (even prior to the official government proposal of it). This suggests that other factors must be considered to have affected the numbers as well. While this goes beyond the scope of the study, such factors can include geographical and societal contexts as well economic circumstances and governmental regulation (Jensen-Eriksen, 2023).

Employed persons, employees and self-employed persons aged 15-74 by Information and Year. Total.

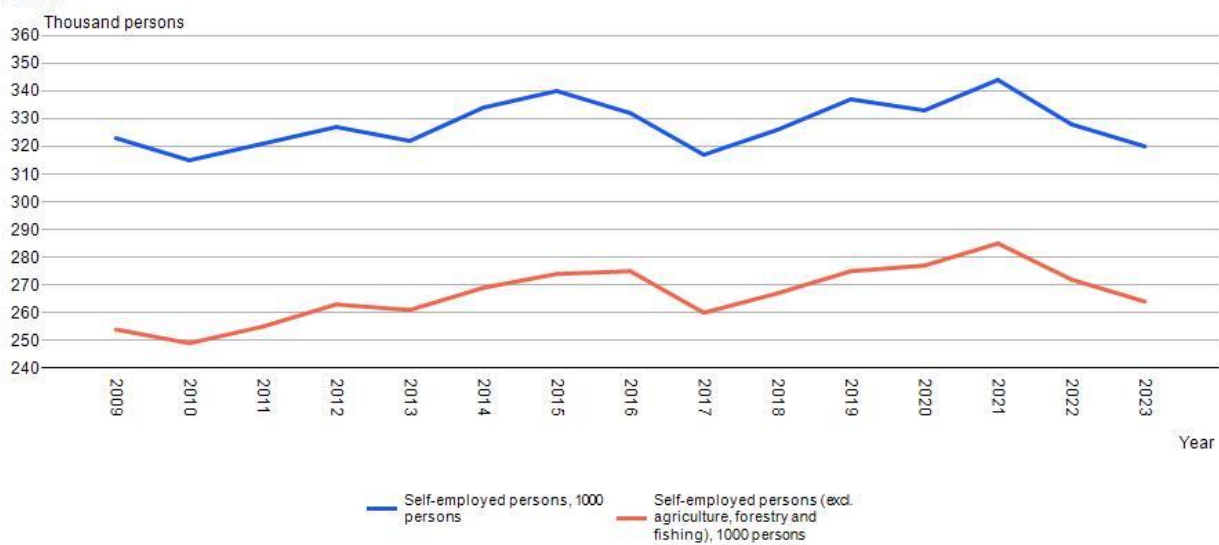


Figure 4. Number of self-employed persons. Source: Official Statistics of Finland (2024c)

2.1.3. Elements of Self-Employment in Finland

In order to provide distinction between wage earners and self-employed persons, Finnish legislation distinguishes between wages (*palkka*) and trade income (*työkorvaus*). The former signifies an employer-employee relationship and the latter an agency relationship (i.e. one's own business operations). (Finnish Tax Administration, 2019; Salonen, 2015, p. 16). The basis for distinguishing entrepreneurial activities from regular employment in Finland lies in reversal assessment of whether the activities satisfy the definition of an employment or public service relationship. If these classification criteria are not juridically met, the activities are evaluated through a set of criteria established by legal and tax practice. While not required to be fulfilled simultaneously, the following four criteria are considered to be the basic characteristics of self-employment in Finland, and are thereby used in case-by-case assessment of the legal nature of one's employment:

1. purpose of profit,
2. financial risk,
3. scope, prevalence, and public nature of activity as well as
4. independence. (Sievänen, 2001, pp. 149–150 in Tuominen, 2001).

Proper statutory categorization between wage earners and self-employed persons is significant, as this constitutes the basis for division of social insurance responsibilities (Salonen, 2015, p. 16), the most remarkable of which is pension coverage (Salonen et al., 2020, p. 26). However, drawing the line between entrepreneurs and wage earners in Finland – even between entrepreneurial types – can be difficult. Finnish legislation permits simultaneous occupation of employment and self-employment status. Currently, self-employed persons do not constitute a homogenous group in Finland, which insinuates challenges when it comes to matters of insurance. (Salonen et al., 2020, pp. 27–29). Most self-employed persons in Finland concurrently work as wage earners (Knuuti & Palomurto, 2015, as cited by Salonen et al., 2020).

Additionally, self-employment in Finland can denote part-time (*sivutoiminen*) or full-time self-employment (*päätoiminen yrittäjyys*). Part-time entrepreneurship oftentimes correlates with higher education levels as well as high income. The number of part-time entrepreneurs varies depending on the method of determination, resulting in a lack of precise statistics on part-time entrepreneurs. (Salonen, 2015, pp. 15, 107–108).

Bearing in mind the complexities with categorization, Pärnänen and Sutela (2020) classify self-employed individuals in Finland into the following groups:

1. self-employed in agriculture
2. employer entrepreneurs
3. self-employed persons without employees. (Pärnänen & Sutela, 2020, p. 12).

Although this was a classification utilized by Pärnänen and Sutela (2020) specifically for their study, it is considered useful for this study as well, since the various forms of self-employment in Finland have been included in this method of grouping. The first group encompasses entrepreneurs whose endeavors occur within agricultural, forestry and fishing contexts, including both entrepreneurs with employees and those without. The second group, employer entrepreneurs, indicates all entrepreneurs (excluding those in agriculture and forest industry) who have employees. Finally, the third group, i.e. entrepreneurs without a labor force, is comprised of “sole entrepreneurs, own-account workers, freelancers and grant recipients” (excluding agricultural and forest industries). (Pärnänen & Sutela, 2020, p. 12).

Out of the categories discussed, sole entrepreneurship (*yksinyrittäjyys*) prevails in Finland, with a 2/3 majority (see Statistics Finland, 2024a) of self-employed persons working as sole entrepreneurs. Sole entrepreneurship can be viewed, in effect, as primarily opting for self-employment as one’s trade,

with well over 80% of sole entrepreneurs working as full-time entrepreneurs. (Salonen, 2015, p. 16). Own-account workers (*ammattinharjoittajat*) typically labor under a trade name, with their expertise as their trade. Freelancers, for their part, can work under a trade name or own company for a salary, or via an employment relationship. Freelancers operate using a freelancer's tax card, and the basic assumption is that they have multiple clients. Finally, grant recipients denote those self-employed persons who have been given a grant for their research or artistic endeavors. For instance, a researcher working under a grant may have a workspace at their university despite not being employed by the university. (Pärnänen & Sutela, 2020, p. 12). An additional category consists of light entrepreneurship (*kevytyrittäjyys*), referring to persons who are in business for themselves and thus self-employed, yet do not possess their own company. This type of self-employment implies invoicing one's services through another invoicing services company (through which one obtains payment), yet maintaining decision-making power over fees for one's services. (Finnish Tax Administration, 2023).

When it comes to professions, self-employed individuals in Finland are chiefly involved with professional lines of business or heading companies that are small in size. Beauty parlors and building companies constitute the professions of highest frequency. (Salonen et al, 2020, p. 43). Hyrkkänen (2009) concurs, maintaining that the demographic trend in Finland among self-employed persons remains such that female entrepreneurs tend to work in the service industry, while male entrepreneurs veer towards construction (Kovalainen, 2003; as cited by Hyrkkänen, 2009, p. 18). In past decades, the variation and differences in income among self-employed person in Finland have been greater than those of wage earners (Suomen Yrittäjät, 2007; as cited by Hyrkkänen, 2009, p. 16). Additionally, there has been a weaker correlation between education and one's income among self-employed persons than among wage earners (Kauhanen, 2004; as cited by Hyrkkänen, 2009, p. 16).

As for size of enterprises, most businesses in Finland are relatively small (Pärnänen & Sutela, 2020, p. 22). In 2023, 93,5% of all businesses in Finland employed less than 10 people (Statistics Finland, 2024b). The EU categorizes businesses as medium-sized (less than 250 employees and turnover under €50 million), small (less than 50 employees and turnover under €10 million), and micro (less than 10 employees and turnover less than €2 million), thus defining the majority of Finnish entrepreneurial endeavors as micro-enterprises. (European Commission, n.d.).

In conclusion, self-employment – universally and in a Finnish context – lies at the center of the theoretical framework for this study, accounting for the positioning of this section towards the beginning of the theory chapter. The remainder of the literature review encompasses various psychological, financial, and legislative factors influencing the potential outcome of underinsurance

among entrepreneurs. Firstly, in order to appreciate pension legislation as a form of social security, a glimpse into insurance theory is provided in the following section.

2.2. Insurance Theory as Context for This Study

A somewhat equivocal word, insurance denotes both the institutions it captures in *concept* as well as the more abstract dimension of insurance *technology*, and the specific *form* it takes at a moment in time (Ewald, 1991). Similarly to Ewald (1991), Outreville (1998, p. xi) incorporates the term of insurance as a concept, method, and economic establishment. Insurance is described as a notable instrument when it comes to risk management (Outreville, 1998), risk management constituting the process whereby potential monetary losses from known risks are minimized (Pellikka et al., 2020, pp. 57–60). Juridically speaking, risk is a vital component of insurance as it constitutes the object in question – insurance, then being a rational model to mitigate the likelihood of loss (Ewald, 1991, p. 199; Ilmonen et al., 2022, pp. 132–137).

Risk aversion signifies an individual's readiness to assume risk (Einav & Finkelstein, 2011, p. 124). Spence and Zeckhauser (1971) note that the aim of insurance is to afford protection to individuals who are risk-averse from having to suffer ramifications of actions which would impact them adversely. An individual's degree of risk aversion (along with other factors such as risk probabilities) then determines one's demand for insurance (Lim et al., 2023).

In a 'textbook setting', the cost and demand for insurance constitutes a situation in which firms operate in perfect competition and at a neutral level of risk, providing sole insurance agreements that shield, to some extent, from the prospect of loss. People vary merely in terms of (undisclosed) expectations of experiencing such loss, and the provision of insurance is not encumbered by additional burdens such as administrative fees. Reality, however, poses a more complex nature. Einav and Finkelstein (2011) clarify how, first of all, insurance (or, on a more general level, selection) markets are distinguished by their demand and cost curves being firmly linked – this being due to people's risk type impacting demand in addition to immediately determining cost. Allocation that is efficient depends on the connection spanning the *marginal* cost (MC) and demand, while equilibrium allocation depends on the connection spanning the *average* cost (AC) and demand. (Einav & Finkelstein, 2011, pp. 116–120).

This gives rise to a type of asymmetric information, namely, adverse selection, resulting in the foundational inefficiency of underinsurance, which, then is linked to loss of welfare. In an ideal case, the solution of the public sector to resolve the inefficiency in question (underinsurance) would be to order all individuals to obtain insurance. Reality is not as straightforward, as, for instance, contextual features of the market affect the matter. Additionally, adverse selection is only one of the forms of asymmetric information – in itself a factor influencing the insurance markets –, another form thereof being moral hazard. (Einav & Finkelstein, 2011, pp. 118–122, 129). The role of information and moral hazard will be elaborated on in the section on internal factors directing self-employed persons when it comes to insurance. At this point, nevertheless, moral hazard can be defined as insurance providing incentive for individuals – alike in behavior prior to obtaining insurance – to alter their behavior thereafter. (Einav & Finkelstein, 2011; Howells & Bain, 2007).

Another dimension of insurance theory comes from two specifics of real-life insurance markets: namely, the additional burdens associated with insurance provision (admin fees) as well as so-called preference heterogeneity (i.e. individuals might be distinct in both risk and preference). Einav and Finkelstein (2011) elaborate on how this undetected diverseness provides the opportunity for advantageous – instead of adverse – selection. Moreover, both adverse *and* advantageous selection ultimately result in inefficiency. The effective response through public policy varies depending on which case of selection is in question. (Einav & Finkelstein, 2011).

When it comes to the security sought through insurance in the first place, Kangas and Niemelä (2017, p. 11) provide a four-step model to demonstrate the financial security afforded in Finland. At the lowest step, a certain level of security is provided to all individuals purely based on living in Finland. A means test (*tarveharkinta*) or income testing (*tuloharkinta*) can be utilized to establish the benefits provided at this level, or they can be based on the universal principle. Security provided through employment – including most forms of social insurance, such as pension and earnings-related unemployment insurance – constitutes the second step of this model. Social security systems are often comprised of elements from both the first and second levels of this model – for instance, the Finnish pension system contains both earnings-related coverage as well as minimum pension security based on residence. As for the third and fourth steps of their model, Kangas and Niemelä (2017) explain that these account for additional and voluntary forms of financial security. The third step contains tied long-term savings and insurance schemes endorsed by society, for instance, via additional pension savings. The fourth step consists of all capital and savings of an individual, which can be considered as a type of buffer in the event of financial risk. (Kangas & Niemelä, 2017, pp. 11–12).

As the first and second steps in the abovementioned model are the only financial security forms that are mandatory in nature, it is meaningful to review these further. Naturally, uncapped additional and voluntary security measures can be adopted by individuals, with the increase of such security diminishing the need for reliance on social security. Huhtanen (2017) maintains that the concept of social insurance has developed historically in conjunction with the concept of social risk. 19th-century industrialism laid the groundwork for both concepts, with new income-related challenges, such as occupational accidents and unemployment, creating risks. Assumed as social (collectively borne) risks, these threats were mitigated through the origination of an insurance-based social security: social insurance. (Huhtanen, 2017, p. 60).

In Finland, the development of social insurance has then led to the current constitution denoting that the right to basic income security shall be afforded to all individuals in cases of possible unemployment, disability, illness, child birth or loss of guardian, and eventual old age (Finnish Constitution, 11.6.1999/731, section 19, subsection 2). The benefits included in various cases of social risk can be categorized into national and earnings-related insurance, which indeed denote primary categories of social insurance in Finland. Additionally, literature on social law considers insurance relating to traffic, occupational accidents, malpractice, and criminal damage as part of social insurance. However, these instances fall beyond the scope of the primary categories, as they do not meet the characteristics of either (national or earnings-based) social insurance category, and are therefore appropriately classified as special arrangements. (Huhtanen, 2017, pp. 60–62).

Social insurance is considered an integral part of the Finnish social security scheme, as is evidenced by extensive legislation on the matter. On a practical level, social insurance implies collective preparation for possible social risks through mandatory individual insurance payments. On the other hand, it entails the individual right to the benefits coverage if the prepared-for-risk is realized. (Huhtanen, 2017, p. 61). Insurance payments are funded by self-employed persons or employers on behalf of their employees (earnings-related pensions), tax revenues (national and guarantee pensions) and by all aforementioned entities (health insurance) (Ministry of Social Affairs and Health, n.d.). Out of the various forms of insurance afforded to individuals, Salonen et al. (2020, p. 26) consider pension provision to be the most crucial part of social insurance for individual persons. Accordingly, this study highlights pension security out of the various benefits afforded through the Finnish social security system for self-employed persons.

3. CONCEPTUALIZING INSURANCE OUTCOME THROUGH CONTRIBUTING FACTORS

Chapter three is allotted to discussing the external (legislation-related) and internal (psychological) factors influencing the insurance outcome of self-employed persons. External factors include the overall Finnish pension scheme, YEL within the Finnish pension scheme, and disincentives within YEL. Internal factors include psychological aspects as well as the role of financial literacy in retirement planning. The chapter concludes with the resulting (under)insurance outcome. The aim of this chapter is to call attention to the complexities surrounding underinsurance among self-employed persons in Finland. Operationalization of the term ‘underinsurance’ is ultimately aspired through conjoining the definition arising from the theoretical background (chapters two and three) with the personal experience of self-employed persons (chapter five) in Finland.

3.1. External Factors Affecting Insurance of Entrepreneurs

As visualized in Figure 1, the insurance outcome of the self-employed is affected by financial, legal, and psychological factors. Financial factors such as a need for financial security and the resulting development of social security and pension have been presented in chapter two as the basis for insurance of entrepreneurs. The remainder of the literature review examines factors that impact entrepreneurs in their acquisition of insurance. To ensure a systematic approach, the researcher has divided these factors into groups of ‘internal’ and ‘external’. Naturally, there is some overlap, and certain factors could justifiably be allotted to both groups. For instance, disincentives relate to both legislative and behavioral facets. However, for purposes of clarity, each factor is included in one of the two groups based on whether initial cause is from outwards structures (legislation, YEL, tax incentives) or internal makeup (behavior, preferences, knowledge).

The following section focuses on the external factors influencing entrepreneurs when it comes to making decisions about insuring oneself. These include the statutory YEL within the Finnish pension scheme, as well as the potential (dis)incentives arising from YEL.

3.1.1. Finnish Pension Scheme

Appreciation of the societal and historical factors influencing the development of the Finnish pension scheme can provide context for better analyzing current statutory reforms, similarly as in the evolvement of social insurance in general (see section 2.2.). According to Uusitalo (2017), although a statutory, state-level pension scheme has its roots in industrialism, the shaping of pension schemes in different societies has been affected by unique political and historical features to the point where pension schemes now vary notably across nations. In addition to political and societal factors, a nation's employment rate and economic growth, as well as age structure, are arguably the most significant factors impacting the pension system. (Uusitalo, 2017, pp. 86–87).

In Finland, the 1960s could be described as the decade of social security, which included enactment of earnings-related pensions for wage earners, and eventually the development of YEL for entrepreneurs (Pietiläinen, 2005). Significant political circumstances marking the decade for Finland included the globally ongoing Cold War as well as its own post-WW-Finlandization. Finlandization was counterbalanced by integration into Western market economies, entailing a transition from agrarian society into eventual industrial economy. (Pietiläinen, 2005; Rautkallio, 2015). This gradual transformation into the highly industrialized nation that Finland is today involved simultaneous development of the overall social security scheme, particularly when it came to pensions. (Ritola & Väänänen, 2023).

Today, the Finnish national pension scheme is comprised of national pension (*kansaneläke*), which is utilized to ensure minimum pension, and earnings-related pension (*työeläke*), which ensures adequate preservation of previous consumption level upon loss of income due to retiring. The general aim of pension can be defined as that of ensuring continuation of reasonable income level in cases of disability, old age, or spousal death. (Ritola & Väänänen, 2023; Rantala & Pentikäinen, 2003). Comparable to the four-step model demonstrated by Kangas and Niemelä, the three pillar model of pension security presented below (Figure 5) encompasses the levels of pension security that pension schemes are comprised of (Uusitalo, 2017, p. 93; also see Harju 2013, p. 4; Salonen et al., 2020, p. 30; and Ritola & Väänänen, 2023, p. 17 for reference to model).

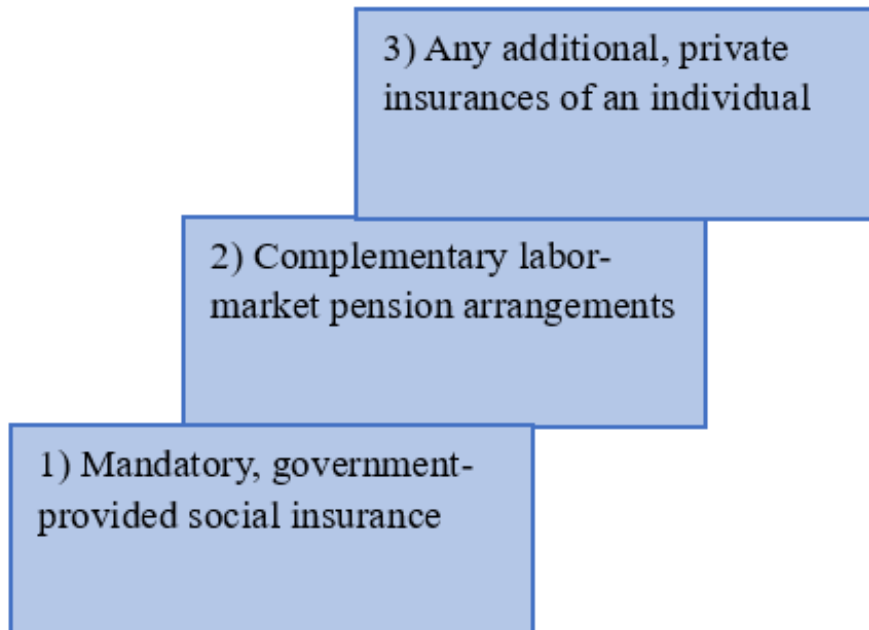


Figure 5. The three pillars of pension security. Source: Uusitalo (2017, p. 93). *Note: The wording in the figure has been adapted by the researcher to more comprehensively explain the pillars.*

This pension security model is utilized, for instance, in the European Union for categorizing both social insurance and pension schemes. Similarly to the four-step social insurance model, the pension security levels one and two (Figure 5) encompass mandatory and government-provided pension schemes (level one) and labor-market-agreed pension arrangements (level two). The third pillar encompasses additional, private insurances taken by an individual. (Uusitalo, 2017, pp. 93–94). The remainder of this section elaborates on the national and earnings-related pensions comprising the Finnish national pension scheme.

Intended to ensure minimum satisfactory pension to all Finnish residents who would otherwise be without, the national pension has been rescinded of relation to income and its amount has been appropriately increased to effectuate ‘satisfactory’ pension. All such persons who have turned 16 years old and live in Finland are included within the National Pensions Act. Individuals who have lived in Finland for at least three years upon turning 16 are entitled to pension. Additionally, non-Finnish residents are eligible for pension if they have lived in Finland for a minimum of five consecutive years immediately prior to their pension. (Rantala & Pentikäinen, 2003, p. 279).

Havakka et al. (2017) underline the fact that the pension scheme in Finland is largely based on a mandatory (encompasses all eligible citizens without option for opting out) premise. Additional,

voluntary insurance complements the general statutory pension system. The role of voluntary insurance in the Finnish pension scheme is exceptionally small. (Havakka et al., 2017, p. 91). Rantala and Pentikäinen (2003) note that the original intent of the Finnish national pension was to secure a minimum level of income upon retirement. Accordingly, the pension system in Finland previously applied rigid adherence to the principle of reducing national pension when income increased (*tulovähenteinen*). (Rantala & Pentikäinen, 2003, pp. 287–279).

The potential benefits provided through the National Pensions Act include pension due to old age, pension due to early retirement, pension due to disability or unemployment, as well as individual early-retirement pension. The amount of national pension one is entitled to is affected by factors such as how long an individual has lived in Finland, the total earnings-related pensions and other compensations one receives, family relations, municipality of residence, as well as the possible continuous need for institutional care. (Rantala & Pentikäinen, 2003, pp. 280–282). Every year that one resides in Finland increases the amount of national pension one is entitled to, with 40 years being the amount necessitated for full national pension coverage. Guarantee pension (*takuueläke*) then supplements the possibly inadequate national pension. Nowadays, the Finnish pension scheme is, as it happens, largely based on income derived from one's employment. This is supplemented with the national pension encompassing all residents who need it. (Havakka et al., 2017, p. 91).

The Finnish earnings-related pension scheme, for its part, is extensive. It encompasses nearly all gainful employment and consists of several Pensions Acts. These Acts include the Employees' Pensions Act (TyEL, 395/2006) for regular wage earners, the Seamen's Pensions Act (MEL, 1290/2006), and the Public Sector Pensions Act (JuEL, 81/2016). The Public Sector Pensions Act (JuEL), for its part, encompasses Municipal-, government-, Evangelical Lutheran Church-, Kela-, and Bank of Finland -personnel. As for the self-employed, all such persons whose gainful activity – be that entrepreneurial or agricultural activity – exceeds the minimum (previously defined) conditions of the law are incorporated in the earnings-related pension scheme. A person's entrepreneurial activities are insured either through the Self-Employed Persons' Pensions Act (YEL, 1272/2006) or through the Farmers' Pension Insurance Act (MyEL, 1280/2006). (HE 27/2023). According to the Finnish Centre for Pensions (n.d. -a), a person can simultaneously receive pensions from various distinct Pensions Acts as well as various different *types* of pensions.

Whereas national pension is intended for providing general security at the previously discussed levels, earnings-related pensions have their own role in the Finnish pension scheme (Rantala & Pentikäinen, 2003, p. 279). The earnings-related pension scheme in Finland pertains to all working individuals.

Employers must take out insurance for all employees between the ages of 17 and – [the year of birth-dependent upper limit of retirement age]. Self-employed persons, for their part, are required to take out insurance for their own earnings. Uusitalo (2017) further details that the sanctity of the Finnish pension security (*työeläketurvan koskemattomuus*) entails retention of one's accumulated pension coverage even upon transition of employment, as well as coverage of accumulated pension rights by constitutional protection of property. (Uusitalo, 2017, p. 101).

An apropos perspective towards the concept of sufficient income upon retirement is offered by Rantala and Pentikäinen (2003). They maintain that in countries such as Finland, the objective of pension is seen as ensuring *satisfactory* living conditions (emphasis added). In other words, it is insufficient to provide minimum income coverage, as retiring should not denote *decisive* deterioration of one's consumption possibilities (emphasis added). This aim is considered achievable by adjusting an individual's pension according to level of earnings which will cease upon retirement. Thus, Rantala and Pentikäinen (2003) elucidate that in Finland, pension serves as a 'continuation salary' of sorts. However, in Finland the desire is to establish an all-encompassing and satisfactory pension scheme. Therefore, purely earnings-based pensions are insufficient, as this will inevitably exclude those individuals whose pension is minute or nonexistent. Thus, the national pension scheme ensures that each individual will receive a minimum level of pension regardless of their prior income levels. (Rantala & Pentikäinen, 2003, p. 279). This raises the interesting question as to whether underinsurance should indeed be considered wholly relative to an individual's income, or whether a universally appropriate amount of coverage should be defended.

As for the financing of the Finnish pension scheme, both the national and guarantee pensions are entirely state-funded. Earnings-related pensions are financed through insurance payments. Additionally, pension funds accumulated from payments (and incomes derived therefrom) from previous years are utilized to supplement the financing of the total pension costs each year. Uusitalo (2017) delineates the forms of pension scheme financing as pay-as-you-go systems (*jakojärjestelmä*), based on yearly collecting the amount of funds needed for pensions of the year in question, and the fully funded (*rahastoiva järjestelmä*) systems, based on immediately collecting the funds needed for future payments of the pensions accumulated in the year in question. The distinction between the two alternatives is not simple, as many countries' pension schemes share traits from both systems. A case in point is the Finnish pension scheme, which can accurately be described as primarily a pay-as-you-go system, yet whose private sector workers' pensions consists partly of a fully funded scheme. (Uusitalo, 2017, pp. 90–93, 120).

Prior to shifting the focus from the Finnish pension scheme on a general level to YEL specifically, an explanation for excluding MyEL from the scope of this study is provided. As established, MyEL covers agricultural entrepreneurs through the farmers' insurance scheme. This affords them pension, insures against occupational accidents, and offers eligibility for sick pay. Additionally, MyEL as a pension scheme extends to grant recipients. They are required to take out MyEL pension insurance if their grant period lasts over four months and the amount received as a grant is at least €1276.04 annually. (Pärnänen & Sutela, Statistics Finland, 2020, p. 111).

Three arguments are given for excluding MyEL from the study. Firstly, the purpose of the researcher was to specifically analyze underinsurance among the self-employed in light of the 2022-reform. As this reform explicitly affected YEL legislation, it seemed consistent that this study solely concern itself with YEL legislation. Adding the fact that of the survey data utilized in this study, a mere 3% (N=36) were MyEL-insured (whereas, for instance, TyEL-insured entrepreneurs constituted nearly three times that amount (N=102)), it was deemed reasonable to limit the scope of the study to YEL. Naturally, MyEL and YEL share common traits as pension schemes. Both, for instance, entail that the reported earned income (*laskennallinen työtulo*) from one's self-employment determines the extent of pension coverage (YEL 112 §; MyEL 14 §). For grant recipients, their annual earned income is determined by dividing the amount (€) granted by the number of days of employment and multiplying the quotient by 360 (MyEL 21a §). However, legislation for the YEL and MyEL pension schemes remains separate, with the HE 102/2022 reform specifically pertaining to YEL articles 112 and 112a, prompting the selected parameters for the research focus.

Thus, the legislative facets of the theoretical framework conclude with the following sections on YEL legislation and possible (dis)incentives arising from within YEL legislation.

3.1.2. YEL

Social insurance for self-employed persons in Finland is first and foremost realized through YEL (Benzarti et al., 2020, p. 258), or MyEL for agricultural entrepreneurs (Mela, 2024). These Acts constitute the sole required insurance schemes for self-employed persons in Finland, apart from any industry-specific, additionally required insurances (Ilmarinen, 2022). Examples of such industry-specific, statutory insurances include malpractice insurance for entrepreneurs working in the medical field (Ilmarinen, 2022) and occupational accident insurance for agricultural entrepreneurs (Knuuti & Vidlund, 2006, pp. 24–26).

As mentioned in the section on key definitions, the basis for pension accrual of self-employed persons is the annually determined YEL income (Rantala & Pentikäinen, 2003, pp. 306–207). Earnings-based pension is accrued by self-employed persons according to the same principle as that of wage earners through TyEL (Rantala & Pentikäinen, 2003, p. 306; Hyrkkänen, 2009, p. 8). The upper limit enacted for reported YEL income is €204 625 annually in 2024 (Työeläke.fi, 2024). Regardless of whether an individual's actual earnings related to input are to exceed this, reporting income higher than the upper limit cannot be confirmed. In other respects, determination of pensions and pension rights is carried out as in TyEL. (Rantala & Pentikäinen, 2003, p. 306). Additionally, as Finnish legislation allows for a person to simultaneously receive pensions from multiple Pensions Acts (Finnish Centre for Pensions, n.d. -a), many entrepreneurs accumulate multiple types – including regular earnings-related – of pension (Salonen, 2015).

In 2024, the insurance payment for self-employed persons ranged from 24.1 to 25.6%, depending on age (Finnish Centre for Pensions, n.d. -b). Additionally, entrepreneurs who are starting out are granted a discount on insurance payments during their first few years of employment (Rantala & Pentikäinen, 2003, p. 307). In 2024, the discount was 22% from YEL payments for the first 48 months (Ilmarinen, n.d.). According to Rantala and Pentikäinen (2003, p. 307), the financial burden caused by YEL payments is eased through the statutory fees being fully tax deductible for the self-employed. The size of YEL payments of an entrepreneur are based on what one reports as earned income from one's self-employment. This reported income is significant in that it provides the basis by which both the upcoming pension as well as the current YEL insurance fee are determined. Prior to the 2022-reform, this confirmed income from self-employment was chiefly determined by the self-employed person, whose task was to assess the value of his or her labor input. (Pärnänen & Sutela, Statistics Finland, 2020, p. 111). This income was then confirmed by a pension insurance company (FIN-FSA, 2021).

Where the pension insurance company's task is to confirm the reported income of an entrepreneur, the Finnish Centre for Pensions is the statutory authority responsible for overseeing that entrepreneurs indeed fulfill their insurance obligations according to YEL. Ultimately the Financial Supervisory Authority (FIN-FSA) oversees the operations of pension insurance companies in Finland. The operational objectives of FIN-FSA include safeguarding the rights of the insured as well as maintaining stability of and trust in the financial markets. On a practical level this entails supervision of the solvency, risk management, and other procedures of pension insurance companies. (HE 102/2022; also see Finlex 2024a 1 §).

An entrepreneur can elect which pension insurance company they insure themselves through (Finnish Centre for Pensions, 2024b). A notable aspect is that if YEL payments do not suffice to cover expenditures, the difference has been funded by the government. (Rantala & Pentikäinen, 2003, p. 307; FIN-FSA, 2021). According to a thematic assessment conducted in January 2021 by the Finnish Financial Supervisory Authority (FIN-FSA, 2021), there appeared to be frequent cases where the confirmed income from self-employment did not correspond with the actual tax-declared income, i.e. underinsuring occurred. Mikko Kautto, CEO of Finnish Centre for Pensions, (2020) describes the previous YEL as, in essence, enabling self-employed persons to elect between current or future (pension) income level.

In June 2022, the Finnish government of the time proposed a statutory reform (HE 102/2022), which was accepted by Parliament and came into effect on January 1st, 2023, and whereby the power to decide the reported income subject to YEL shifted from self-employed persons to pension insurance companies (Finlex, 2024a). Underinsurance of self-employed persons is referred to as reasoning for the reform, along with needs for improvement regarding confirming the YEL income (HE 102/2022). The reform was based on the working group report published by the Ministry of Social Affairs and Health on March 13th, 2019.

According to section 112 of the reformed Act, the pension insurance institution is henceforth to determine the annual pension-declared income of the self-employed person. This pension-declared income is intended to be consistent with the amount that a person with equivalent professional competence would be paid if hired to perform the entrepreneurial tasks of the self-employed person. Pension insurance institutions are to use the equivalent median salary of the sector in question as a basis for establishing the pension-declared income of self-employed persons. Other factors to be taken into consideration include data on the expertise of the entrepreneur, the amount and value of work input, as well as the scope of entrepreneurial activities. (Finlex, 2024b). This intention was not novel, as the legislation previously aimed for the same outcome nominally. However, the actualization has been seen as lacking (FIN-FSA, 2021) which led to the (HE 102/2022) reform. The fact that prior YEL legislation thereby, in effect, allowed for underinsurance to be the norm (entrepreneurs could decline to insure themselves according to the intent of the law) reinforces the intrigue of the topic.

The objective of the reform is thus declared as the improvement of pension security of self-employed persons. Likewise, it aims to actualize the intent of YEL by adjusting the declared income to more closely match the value of a self-employed person's work input throughout the continuation of the entrepreneurial activities. (HE 102/2022). In response to the proposed reform, a petition was signed

by over 65 000 people in autumn 2022, protesting the changes. Nonetheless, the reform – albeit slightly adjusted – came into effect in January 2023 (see Hanén, 2022). Interestingly, the petition criticized the very use of the term “underinsurance” among self-employed persons, as a term that “unjustifiably stigmatizes and criticizes small and sole entrepreneurs” (Hanén, 2022, para. 2).

Indeed, the working group report (STM, 2019) contains a dissenting perspective provided by Suomen Yrittäjät as to the lack of flexibility afforded within the reform to self-employed persons whose entrepreneurial endeavors or life circumstances diverge from standard cases. According to the HE 102/2022, presented to Parliament on June 17th, 2022, the matter of flexibilization of YEL payments (for sole entrepreneurs and those whose business endeavors fluctuate) remains an issue. Similarly the final committee hearing on November 11th, 2022, which succeeded the parliamentary discussions, maintains that the situation of sole entrepreneurs and those whose business endeavors fluctuate is yet to be resolved (Ministry of Social Affairs and Health, 2019). (For detailed breakdown, i.e., Processing Records of Case HE 102/2022, see Parliament of Finland, 2024).

Equally pivotal to YEL legislation in the study on insurance among entrepreneurs, the potentially (dis)incentivizing effects caused by this legislation are discussed in the following section.

3.1.3. (Dis)incentives

Incentives versus disincentives in Finland are part of an ongoing discourse surrounding statutory reforms. From a legislative perspective, it is critical to detect when a reform is effective and when it may in fact have a disincentivizing effect. In this section, the phenomenon of disincentives is defined (Harju et al., 2019), discussed in relation to self-employed persons (Power & Rider, 2002), and finally, assessed in the context of YEL – prior to and post 2022-reform.

Harju et al. (2019) provide definitions for the concepts of (dis)incentives through their assessment of the Finnish VAT exemption threshold for entrepreneurs. They maintain that different types of thresholds providing exemption based on size are utilized in legislation pertaining to entrepreneurs. The challenge that these policies can bring is that they may produce unsought incentives for companies to remain below the threshold. This owes to an enlarged tax burden or various additional requirements awaiting above the threshold. Since surpassing the set VAT threshold necessitates VAT remittance to the tax authorities, the potential behavior caused at the threshold is referred to as tax incentives. (Harju et al., 2019, pp. 139, 141).

In the case of VAT remittance, a *disincentive* then arises for crossing the threshold for companies whose inputs relative to their sales are small (the same being true the other way around). If value added tax could be passed on entirely to customers, pure tax incentives would, accordingly, not instigate consequent behavior. The study by Harju et al. (2019) appropriately calls attention to the need for controlling for multiple factors when assessing impact of incentives. For their study in particular, they had to consider both the effects of compliance costs as well as the incentives caused by VAT remittance. As it turns out, their study suggests that measures taken to condense and clarify different obligatory practices can decrease distortions stemming from size-based tax regulation regarding self-employed persons as, in fact, these compliance costs appear to cause clustering at the threshold. (Harju et al., 2019, pp. 141, 153).

When it comes to the issue of why self-employed persons are affected by certain incentives, Power and Rider (2002) remark that perhaps tax prices affect the ‘purely’ self-employed more than self-employed persons overall. This observation is based on results from their study on tax-related savings incentives on entrepreneurs. The researchers consider (pertinently to the overall theme of this thesis) that perhaps the most committed self-employed persons who lack income from wage or salary perceive the accumulated company value as their chief source of *pension funding* (emphasis added). This, in turn, could cause behavioral effects towards transforming incentives. Power and Rider (2002) conclude their study with the findings that it appears that the participation of self-employed persons in deferred tax pension schemes is receptive to tax price variations. The authors caution against extensive generalizations, remarking that this detected higher elasticity among self-employed persons could be due to the freedom in adapting their contributory amounts as needed. (Power & Rider, 2002, pp. 45–47, 50–51).

Although a complex topic, various (dis)incentives can be concluded to play a role in the financial behavior of self-employed persons. Tax-related policies appear to have an effect on pension savings (Power & Rider, 2002; Harju, 2013). Administering tax-related reforms requires discretion. On one hand, for instance in the case of the VAT exemption threshold study by Harju et al. (2019), it appears that lowering mandatory reporting-related costs may resolve the related unwanted incentives. On the other hand, it is possible that this would merely shift the burden to the authorities, leaving room for improvement when it comes to total economic efficiency. (Harju et al., 2019, p. 154). In welfare states such as Finland, where retirement funding is chiefly taken care of by the government (Harju, 2013, p. 22), the impacts of incentives are vital to consider. In the case of (dis)incentives specifically relating to YEL, the researcher inspected legal texts and pension scheme reviews, organizing key findings into a table (Table 2) below to facilitate easier inspection.

Table 2. Possible disincentives caused by YEL pension scheme

Potential issue	Enabled how in legislation	Disincentivizing effect (analysis of writer unless otherwise noted)	Outcome	Mitigative measures	Other side of the coin
<i>Actuarial fairness:</i> Beverigian model (Tenhunen, 2008, pp. 21–23) enabling equal pension coverage regardless of lack of YEL payments	YEL regulated to provide equal pension security as that provided through TyEL (HE 102/2022 vp, section 1)	Motive for entrepreneur to keep YEL payments minimal Disincentive of group receiving pension coverage without contributing; deficit when actualized pension of an individual exceeds their previous YEL contribution	Since YEL a pay-as-you-go system, funding supplemented by government (HE 102/2022 vp., section 2.1.3.); €500 mil. deficit in 2023 (Finnish Centre for Pensions, 2023b.) Pricing advantage over wage earners / distortion of competition (HE 102/2022 vp, section 2.2.1.)	Shifting YEL-income determining to pension institutions, using equivalent median salaries as calculation base (HE 102/2022) Significance of transparency – even when unfavorable (Tenhunen, 2008, p. 27)	Purpose being national / guarantee pension financed by the recipients (HE 102/2022 vp section 2.2.1), risk of perceived unfairness by self-employed persons
Hindering effect of <i>tax component</i> , when viewed as such (Tenhunen, 2008, p. 26): perceiving YEL payments as taxes instead of (personal, to be returned) savings	Chiefly legislative pension scheme, small role of optional pension insurance (Havakka et al., 2017) – mandatory nature of payments perceived as tax-like?	Distrust towards system Viewing YEL as poor investment	Distortions in the labor market (Holzmann & Hinz, 2005, in Tenhunen 2008 p. 27)	Significance of transparency (Tenhunen, 2008, p. 27), as these incentives determined by individual’s perception of <i>actuarial fairness</i>	Holzmann and Hinz 2005, in Tenhunen 2008 p. 27: theoretically, actuarial fairness minimizes labor market distortions – however, market imperfections
High <i>threshold for triggering adjustment</i> (<i>tarkistamiskynnys</i>) allowing for continuance of minimum YEL insurance (HE 102/2022; also Salonen 2015, p. 105)	Prior to 2022 reform, revision of confirmed income after establishment of initial income (<i>alkutyötulo</i>) required substantial change in earnings factors	If initially declared YEL-income remains at level low enough that there is likelihood of pension being supplemented partly by national pension, it might make sense economically not to increase YEL-income (Salonen, 2015, p. 105)	Possibility of numerous unnoticed cases of underinsurance, whether intentional or not	Regular monitoring and verification of earnings after initial income established (proposal by government, HE 102/2022 vp, section 2.2.2)	Objective: strengthen economy now or later?

Although not considered an exhaustive list, three potentially disincentivizing issues were identified in Table 2. These are realization of actuarial fairness (Tenhunen, 2008); tax component hindrance (Tenhunen, 2008); and threshold for adjustment of YEL (HE 102/2022). Each issue was assessed in terms of legislative context, disincentivizing effect, mitigative measures, and other sides to consider.

Tenhunen (2008, pp. 21–22) describes actuarial fairness as the relationship between one’s pension contributions and pension benefits throughout his or her life cycle. On a spectrum between the Beveridge national pension system and, on the other end, the Bismarck earnings-related pension system, Finland, although carrying traces of both can arguably be positioned closer to the Beveridge model. (Tenhunen, 2008). In the case of YEL, this raises the question of whether fairness is realized, if equal pension coverage is afforded to all regardless of lack of YEL payments. Originating in 1970, YEL has been regulated from the start to provide equal pension security as is provided through TyEL for wage earners (HE 102/2022 vp, section 1). This could produce a motive for entrepreneurs to keep YEL payments minimal. The disincentive created is that of a large group potentially receiving pension coverage without contributing to the system. This results in a deficit when actualized pension benefits of an individual exceed their YEL payments.

The outcome of this is significant. Since YEL is a pay-as-you-go system, necessary funding is supplemented by the government (HE 102/2022 vp, section 2.1.3). TyEL, for its part, is partly funded through reserves (HE 102/2022 vp, section 2.1.3). With the current shortage of YEL payments, the government-sponsored deficit approximated €500 million in 2023 (Finnish Centre for Pensions, 2023b). An additionally distorting outcome mentioned in the government’s proposal for the 2022-reform is that of the possible pricing advantage over wage earners. Ultimately, there is the issue of potential distortion of competition, if a number of entrepreneurs fail to contribute sufficiently through their YEL payments. (HE 102/2022 vp). The 2022-reform can be seen as a mitigative measure taken by the government of the time to alleviate the issue of fairness. The intention was that this would shift the YEL-income determination to pension institutions, who are to use equivalent median salaries as the calculation base (HE 102/2022 vp).

The other side of the matter worth considering lies in the potential distortions caused by mitigative measures such as the YEL reform. The purpose of the Finnish pension scheme is that those who end up actualizing national or guarantee pension benefits have financed it primarily through their own pension payments (HE 102/2022 vp, section 2.2.1), which was indeed the intent of the reform. Since self-employed persons must include the wage coefficient (1.501 during 2022, see Pension Act Service, 2025b) in their income, the reform may be perceived as unfair (see Hanén, 2022). This could

occur particularly if a self-employed person feels that his or her contribution is accumulating additional coverage from which he or she will not sufficiently benefit. If the reform could detrimentally impact the number of self-employed persons in Finland, it would be significant to analyze the likelihood of this. Although precise calculations for this are beyond the scope of this study, the disincentivizing effects of the reform have indeed been examined as part of the empirical analysis in chapter five.

Another potential issue regarding the YEL pension scheme is that of the hindering effect of the tax component of pension payments. This denotes perceiving YEL payments as taxes instead of personal savings to be returned. (Tenhunen, 2008, pp. 26–27). The disincentivizing effect is the possible distrust this can cause towards the system, as self-employed persons may view YEL as an unprofitable investment. Indeed, according to the additional statement given by the Ministry of Social Affairs and Health (2022), with calculations from unpublished memorandum, possible reasoning for minimizing one's YEL-declared income comes from viewing it as a poor investment. Likewise disincentivizing is the idea that changes in one's declared YEL-income would merely lead to increased payments without equivalently increased benefits (Ministry of Social Affairs and Health, 2022).

As an actuarially fair system has been considered to minimize the distortions on the labor market (Holzmann & Hinz, 2005, in Tenhunen, 2008, p. 27), distrust in the system could be seen to then increase the distortive outcome. Tenhunen (2008) emphasizes the significance of transparency, as much is determined by the individual's perception of fairness when it comes to incentives. In theory, overall actuarial fairness would minimize labor market distortions. However, due to market imperfections, it appears that a system that to some extent *distorts* actuarial fairness is a better option. (Tenhunen, 2008, pp. 27–28).

A third potentially disincentivizing issue caused by YEL legislation relates to the high threshold for triggering adjustment (*tarkistamiskynnys*), allowing for continuance of minimum YEL insurance. Prior to the 2022-reform, the revision of confirmed income after the establishment of initial income (*alkutyötulo*) required substantial change in the factors affecting earnings. (HE 102/2022; Salonen, 2015). The disincentivizing effect of this lies in the following: if initially declared YEL-income has remained at a level low enough that there is a likelihood of being supplemented partly by national pension, it might make sense economically not to increase one's YEL-income, if one can avoid doing so (Salonen, 2015, p. 105).

The outcome of this entails the possibility of unnoticed cases of underinsurance – whether intentional or not. As a mitigative measure, the government proposal contained the suggestion of regular monitoring and verification of earnings after one’s income has initially been established. The purpose of this was ensuring that YEL-declared income continue to accurately correspond to one’s labor input. (HE 102/2022 vp., section 2.2.2). However, the government proposal also interestingly points out the contradictory question of whether to strengthen the economy now or later. Permanent decline of YEL-income payments would weaken the public economy in the near decades, but later the effect would diminish and ultimately be reversed. On the other hand, increasing YEL-income payments would strengthen the public economy during the next few decades, with the effect then being later reversed. (HE 102/2022 vp, section 2.2.1.). While the public economic perspective of the matter of underinsurance is not the focus of this thesis, it bears mentioning, as the financial and legislative dimensions of insurance indeed tie back to the economy of the state.

In addition to externally arising legislation and (dis)incentives, the theoretical framework for this study includes a myriad of internal factors influencing the insurance outcome of individual self-employed persons. These internal factors relate to knowledge and behaviors of an individual, and will be discussed in the following section.

3.2. Internal Factors Affecting Insurance of Entrepreneurs

In a purely theoretical scheme, people would approach problem-solving in a methodical manner similarly to economists. Hence, economic theory typically adopts this presumption. In reality, for instance, people’s saving behavior tends to deviate from the textbook scenario. This owes to a lack of knowledge or ability (i.e. miscalculating the appropriate savings amount) or self-control (i.e. having insufficient self-discipline to refrain from present spending in favor of future wealth). (Thaler & Benartzi, 2004, p. 165). When examining underinsurance among the self-employed, it is thus necessary to consider psychological pitfalls that can result in insufficient coverage for retirement.

3.2.1. Psychological Aspects

A certain level of tolerance towards risk can be considered central to self-employment. From a self-employed person’s perspective, the decision as to a desirable amount of insurance coverage hinges

on, among other factors, his or her own risk aversion (Cervellati et al., 2019, p. 50). While there is ambiguity (see: Brockhaus, 1980; Tucker, 1988 in Parker, 2004, pp. 83–84) among study results as to whether self-employed persons are generally less risk averse than regular wage earners, certain previous studies have indicated this may be the case (see: van Praag & Cramer, 2001; Uusitalo, 2001 in Parker, 2004, pp. 83–84). If a self-employed person tends to be less risk averse than a regular wage earner, a reasonable alternative could be somewhat lower insurance coverage than that of wage earners – if indeed the societal system aspires to promote entrepreneurial freedom.

However, since Finnish self-employed persons are, in any case, automatically included in the national pension insurance scheme, contribution to some extent to said pension scheme would seem feasible. As previously established, the lack of YEL payments and simultaneous pension coverage even for individuals whose YEL contributions have been insufficient poses a unsustainable equation in the long run (HE 102/2022). Were insurance to be purely demand-based (the demand arising from individual levels of risk aversion), this would result in market failure (Havakka et al., 2017). Einav and Finkelstein (2011, p. 124) highlight the heterogeneity in individuals' risk aversion. This, combined with the heterogeneity in their actual risk level (estimated expense), demonstrates the complexity of insurance markets in practice. For instance, individuals who are considered 'high-risk' may be so due to actual greater likelihood of peril (such as long-term illness) or because insurance incites a greater behavioral reaction (Einav & Finkelstein, 2011, p. 136).

A plethora of additional psychological factors come into play when it comes to an individual's saving behavior and insurance readiness. Einav and Finkelstein (2011) bring up cognition as a possible impetus. Higher cognitive capability tends to enable improved decision-making. In the case of a study on Medigap coverage among senior citizens, higher cognition led to increased insurance coverage and simultaneously decreased health costs. (Fang et al., 2008; as cited by Einav & Finkelstein, 2011, p. 126). Previous research indicates that an individual's emotions can possibly hold more sway over financial choices than rationality (Taffler & Tuckett, 2010; as cited by Kalmi & Ruuskanen, 2018, p. 347).

Additionally, an individual's outlook towards finances and spending can influence their financial actions (Kalmi & Ruuskanen, 2018). In addition to one's level of risk aversion, an individual's *loss* aversion is a constituent worth considering regarding psychological factors potentially affecting savings behavior. Thaler and Benartzi (2004) illustrate loss aversion as the observed propensity for people to attribute more weight to losses over gains. On a practical level, this entails a potential

reluctancy among people to contribute more towards savings, as the resulting reduction in current income is felt more acutely as a loss (Thaler & Benartzi, 2004, pp. 169–170).

Cervellati et al. (2019), for their part, speak of behavioral biases that may affect entrepreneurial insurance decisions, based on a study they conducted among small and medium-sized entrepreneurs in Italy. “[O]verconfidence, over-optimism, risk misperceptions, and stubbornness” are listed as potential biases that may – albeit indirectly – affect self-employed persons’ decisions for (under)insuring themselves and their companies (Cervellati et al., 2019, p. 49). Notably considered suboptimal in the case, underinsurance among entrepreneurs in their study appeared due to these specific behavioral biases. Emphasis is given to the noteworthy, albeit indirectly affecting, relationship between falsely assessed risk and an over-optimism or over-confidence bias. For purposes of brevity, the additional psychological factors relating to personality traits, preference, health, and demographics will not be elaborated on here. However, it should be mentioned that these types of factors likewise influence insurance. (Cervellati et al., 2019).

Another issue that can be considered a potential pitfall in allowing individuals to independently determine their levels of insurance is that of myopia, or shortsightedness. Salonen et al. (2020) consider causes that explain entrepreneurs’ inclination towards underinsurance. An example of these is the free-rider issue, arising in cases of minimum participation yet eventual reliance on the national pension scheme. The researchers conclude that these issues suggest myopic behavior on the part of self-employed persons. (Salonen et al., 2020). Reasoning given for aforesaid myopia includes false impressions of pension-related incentives (Chan & Huff Stevens, 2008; as cited by Salonen et al., 2020, p. 28) as well as the issue of “bounded rationality and self-control” (Thaler & Benartzi, 2004; as cited by Salonen et al, 2020, p. 28).

Indeed, it would appear that a lack of saving towards retirement could, in some cases, be characterized as a mistake – as something that a person in hindsight would want to do differently if he or she were able to (Thaler & Benartzi, 2004, pp. 165–170). The limited rationality of people in decision-making is something that Thaler and Benartzi (2004) incorporate in their savings program by making it uncomplicated and able to assist people in estimating the saving rate necessitated for their lifetime. Cervellati et al. (2019, p. 58) interestingly detect evidence in opposition towards rationality of entrepreneurs. They point out that part of their study’s results could imply – admittedly counterintuitively – that risk perception of entrepreneurs (at least in Italy) is different and perhaps even somewhat irrational. Naturally, one must exercise caution when interpreting results of these types of studies, as it can be difficult to appropriately generalize findings internationally. Cervellati

et al. (2019, p. 65) point out the limitation of their study encompassing only Italian entrepreneurs, albeit a large sample thereof.

Needless to say, the abovementioned pitfalls in preparing for adequate retirement savings vary between individuals. For instance, not all self-employed persons demonstrate myopic behavior. The challenge in determining appropriate public policy lies within the heterogeneity found among the saving behaviors of individuals (Harju, 2013; Salonen et al., 2020). As Harju (2013) notes, certain individuals save excessively while others do so insufficiently.

Thaler and Benartzi (2004) review various explanations as to why people ‘under-save’, which here refers to saving below one’s life cycle rate. They take note of the fact that estimating and calculating a suitable savings amount can pose a challenge even for financially knowledgeable individuals. Self-control may be an issue, evidenced through numerous households stating a desire but lack of discipline to save more. Additionally, people tend to procrastinate – i.e. defer until future time – unappealing duties. In other words, ‘under-saving’ can be related to pure financial knowledge or skill (or lack thereof), as well as psychological and behavioral traits. (Thaler & Benartzi, 2004, p. 167). The researchers further elaborate on the causal effect between procrastination and an inclination towards inertia. Numerous employees exhibit procrastinatory tendencies when it comes to defined contribution savings plans, as aforementioned employees may have the intention of joining the plan yet never do so (Thaler & Benartzi, 2013; Thaler & Benartzi, 2004). Thaler and Benartzi (2004) take advantage of tendencies such as inertia in their proposed SMarT savings plan. Since procrastination-caused inertia tends to keep people in the savings plan once they have initially signed up, this plan can take the unfavorable proclivity that causes people to indefinitely delay saving and, instead, utilize it to their benefit (Thaler & Benartzi, 2004, p. 185).

Although the significance of information in retirement planning merits its own section, it is meaningful to briefly touch on the adverse dimensions of asymmetric and private information in conjunction with other potential pitfalls regarding insurance. Defined as a scenario in which, for instance, the buyer of insurance is privy to more information than the seller regarding potential risks (Law & Smullen, 2008), asymmetric information appears, for instance, in cases of moral hazard or adverse selection (Einav & Finkelstein, 2011, p. 129). Salonen et al. (2020, p. 45) include asymmetric information – along with alternatives of financial limitations and preferences – as potential impetuses towards underinsurance. Finally, Einav and Finkelstein (2011, p. 137) call attention to the various aspects of private information which insurance buyers might discreetly be aware of, i.e. anticipated expenses and predisposition towards risk.

The above literary findings indicate that people's financial behavior is influenced by internal factors such as risk aversion, myopia, and limitations when it comes to rationality and self-control. Entrepreneurs do not seem to be excluded from the abovementioned factors (see Cervellati et al., 2019). Naturally, heterogeneity between individuals causes variation when it comes to susceptibility to these factors. Certain characteristics may, in fact, increase personal aptitude for saving, as in the case of having higher cognition. (Einav & Finkelstein, 2011).

Cervellati et al. (2019, p. 65) note that although entrepreneurs should ideally exhibit logic and reasonability when making decisions for their companies, this does not appear to be the case, at least among SMEs in Italy. They detect underinsurance among the entrepreneurs in their study, and contribute this to psychological factors including over-confidence and over-optimism. Thaler and Benartzi (2004, p. 170), for their part, recapitulate that significant behavioral agents among people who appear to be saving inadequately include limitations in rationality and self-discipline, tendency to procrastinate (leading to inert state) as well as loss aversion. Thaler and Benartzi (2013) conclude with the suggestion that behavior can be markedly influenced by designed presenting of choices, perhaps even more so than by monetary incentives. Herein lies the significance of behavioral economics in understanding financial (here: saving) behavior of individuals. For instance, according to Thaler and Benartzi (2004), the successful implementations of the savings program SMarT indicate the potential for utilizing behavior economics to improve saving behavior of employees.

3.2.2. Financial Literacy in Retirement Planning

An additional dimension of personal factors influencing one's retirement preparedness is that of financial literacy. Defined by the OECD as encompassing facets of financial proficiency, attitudes, and ways of behavior (OECD, 2016; as cited in Rostamkalaei et al., 2022, p. 65) financial competency is linked to improved retirement planning (Rostamkalaei et al., 2022; Lusardi & Mitchell, 2011; Koh & Mitchell, 2019). This particular proficiency constitutes the ability to comprehend interest rates and diversification (Lusardi & Mitchell, 2011, p. 505), as well as obtain information on financial issues and plan for pension, among other things (Rostamkalaei et al., 2022, p. 64).

The relevance of financial literacy stems from the way it tends to correspond with financial wealth (Koh & Mitchell, 2019). Moreover, when it comes to preparing for retirement, financial literacy has been linked with increased wealth upon retiring (Lusardi & Mitchell, 2011). For self-employed

persons who have more control over their own pension preparation, accruing wealth for retirement requires more knowledge and preparedness than for wage earners (Rostamkalaei, et al., 2022).

Interestingly, studies reveal a lack of distinction when comparing financial literacy between the self-employed and regular wage earners (Koh & Mitchell, 2019, pp. 17–19; Rostamkalaei et al., 2022, pp. 77–78). A caveat to this comes from Lusardi and Mitchell's (2011) study, according to which self-employment in Germany and Japan did denote better retirement planning. However, on a global level, financial competency is alarmingly low. In fact, financial *illiteracy* tends to prevail across countries regardless of pension schemes and advancement of financial markets (Lusardi & Mitchell, 2011, p. 506; Rostamkalaei et al., 2022, pp. 63, 66).

This lack of knowledge – and resulting lack of retirement planning – can be seen as problematic particularly in the case of self-employed persons. This is because they have greater control (hereby greater risk) over their financial decisions (Rostamkalaei et al., 2022). In fact, Rostamkalaei et al. (2022, p. 81) found in their study that self-employed persons tended to more likely profess knowledge regarding adequate savings levels to attain desired retirement. However, they were simultaneously less likely to carry out this knowledge than their wage earning counterparts. This may be partly due to entrepreneurs opting to prioritize funding their business operations instead of future retirement schemes, with the hope of then benefitting from the investments in their business upon actual retirement. (Rostamkalaei et al., 2022). Added complexity to the matter pertains to distinguishing between genuine preparedness and overconfidence in one's retirement planning (see Angrisani & Casanova, 2019). In the case of the self-employed in Finland, this could be applied as the difficulty in distinguishing between those who underinsure themselves according to YEL due to their financial knowledge from those who underinsure themselves due to a *lack* of financial knowledge.

The psychological aspects discussed in the previous sections constitute the individual-dependent, knowledge- and behavior-based factors influencing an entrepreneur in his or her insurance decisions. While not deemed exhaustive, these internal (as well as the previously discussed external) factors selected for the theoretical framework are all considered to play a significant role when it comes to the insurance outcome of self-employed persons. The final subchapter of chapter three ties the elements of the theoretical framework together, prefacing the following empirical chapters.

3.3. Insurance Outcome

In their decision to insure themselves for retirement, entrepreneurs are impacted by numerable external and internal factors. By legal and financial definition, the resulting insurance level of entrepreneurs can be determined as under-, appropriate-level, or over-insurance. A question that can be raised at this point is whether entrepreneurship, by nature, allows or should allow for underinsurance. Have self-employed persons, by being self-employed, earned the right to insure themselves according to their own discretion – even below the level of their tax-declared income? Should they still earn the right to full YEL pension? Whether the statutory threshold for underinsurance is accepted by self-employed persons merits research, which provides the purpose of this study. At this point, the ambiguity of the concept ‘underinsurance’ is recapitulated to complete the theory chapters and preface the empirical analysis.

Although specifically related to healthcare insurance, the discussion provided by Ward (2006) on conceptualizing underinsurance can be applicable for analyzing underinsurance as a concept. Ward (2006) demonstrates that current research considers underinsurance to occur when one’s (here: health) insurance benefits are insufficient. The author proceeds to highlight the fact that the term *insufficient* is relative. This implies that comprehension of *sufficient* coverage (here: health insurance benefits) is necessitated in order to define *insufficient* coverage. This leads the author to categorization provided by Bashshur et al. (1993), in which the various levels of insurance are divided into three categories: “excessive”, “full”, and “adequate” coverage. (Bashshur et al., 1993; as cited by Ward, 2006, pp. 502–503). Similarly, Salonen et al. (2020) provide categories of “appropriate”, “under-“ and “over-“ insurance to depict the various realized levels of insurance among self-employed persons in the Finnish pension scheme (Salonen et al, 2020, p. 29).

One question that this type of assorting raises is whether the categories should be absolute or relative to one’s income levels. Alternatively, selected categorization could reflect the minimum contribution levels required in order to eventually shift the burden of financing completely from the state to the self-employed persons. As the Finnish population continues to age, the lack of reserved funds in YEL necessitates an increasing share – currently approximating 30%, according to Finnish Centre for Pensions (n.d. -c) – of the pensions of self-employed persons (Varjonen, 2023).

The involvement of the public sector in pension security to some extent (through exacting payments into a collaborative pension scheme) can be justified by the imperfect markets of society. These, in turn, are due to for instance asymmetric information and a lack of rationality on part of individuals,

as established in this chapter. (see Havakka et al., 2017). Not surprisingly, low pension is one of the key factors associated with risk of (relative) poverty upon retirement (Ahonen et al., 2019). If self-employed persons are left to freely provide for their pension while minimally insuring themselves through regular YEL payments, this could then increase the risk of poverty upon retirement. Another rather significant factor is the current shortage of payments into the YEL pension fund (Ministry of Social Affairs and Health, 2019). Reasons for this shortage include that while YEL follows TyEL, the YEL system is not fully funded, entailing a lack of reserved funds for YEL. Historically speaking, the YEL contribution accumulation have tended to be insufficient when it comes to actual pension coverage. Finally, self-employed persons and wage earners differ in terms of age, self-employed persons being older on average, denoting different pension expenditure on a structural level. The fact that entrepreneurs pay a reduced YEL contribution fee additionally affects the accumulated pension funds of the self-employed. (Ministry of Social Affairs and Health, 2019, pp. 41–42).

An additional, perhaps overlooked, perspective on the matter is the fact that Finland is a country whose pension scheme has historically been construed based on a national insurance model (*kansanvakuutusmalli*). This entails that the general insurance scheme encompasses self-employed persons the same way it does the rest of the population, as discussed in the previous chapter. Contrastingly, the labor insurance model (*työväenvakuutusmalli*), utilized in, for instance, Germany, excludes most self-employed persons from the pension security system. (Knuuti & Vidlund, 2006). The national insurance model utilized in Finland could be considered to provide better security upon retirement. However, extensive comparison of the differences between these systems is beyond the scope of the study. Suffice it to say that there are pros and cons to both.

The literature review in chapters two and three has explored key concepts constituting the theoretical framework (Figure 1) on the topic of underinsurance among the self-employed. The writer highlights the fact that *underinsurance*, as a concept yet to have been properly defined in research, is appropriately conceptualized through previous literature on the various facets (financial, legislative, psychological) of which it is comprised. Based on the literature review, the writer maintains that the concept of underinsurance is best defined by its legal and financial dimensions (sections 2.2. and 3.1. of the theory chapters) and best operationalized by assessing the positioning of entrepreneurs towards related issues (chapter five).

4. METHODOLOGY AND DATA

The following chapter describes the methodology and data used in the study. First the philosophy behind the research as well as the research method are elaborated on. The remainder of the chapter then provides descriptions of the data collection process and the data itself.

The research question for this particular study was the following: Does enforcement of legal and financial definition of underinsurance among entrepreneurs align with the outlook of self-employed persons in Finland? Conceptualization of the phenomenon ‘underinsurance’ has been intended through the theoretical framework. The objective of the data analysis is to observe how the enforced definition seems to fit with opinions of entrepreneurs on issues of autonomy, solvency, and regulation.

4.1. Research Approach

The philosophical premises in research are significant in that they influence the entire research process, beginning with the researcher’s assumptions for determining reality. Referred to as the philosophy of social science, the branch of research concerned with philosophical assumptions explicates ontological, epistemological, and methodological assumptions in research. (Bell, Bryman & Harley, 2019, pp. 25–42). Considering the philosophical perspective of the research process enables a researcher to design the study in a coherent and credible manner (Eriksson & Kovalainen, 2015).

Research is primarily distributed into categories of qualitative or quantitative studies, or a mixture of the two. These two approaches are distinguished by the philosophical perspectives driving the research as well as by the data collection process itself. (Eriksson & Kovalainen, 2015). In quantitative research, the purpose is to obtain reliable data that can be generalized to the population in question (Bell, Bryman & Harley, 2019). To do this, the data must be measurable (Vogt, 2011). In this study, the RQ entails amassing numerical information. The study purposes to objectively outline whether enforcement of the definition of underinsurance aligns with overall viewpoints of the self-employed. Additionally, the data consists of secondary, statistical data. For these reasons, quantitative analysis is considered the appropriate approach in this case.

The philosophical assumption for this study consists of a post positivist approach. Intended to improve upon positivism, post positivism acknowledges limitations to exhaustively explaining

reality, while still advocating a numerical analysis approach to obtaining knowledge on a phenomenon (Eriksson & Kovalainen, 2015, pp. 18–19). The approach is justified, as the aim is to conduct simple descriptive statistics on YEL-related questions on a sizeable group of entrepreneurs.

When it comes to the section on increased freedom versus security (section 5.3.), one could argue for the interpretivist position as a philosophical assumption. Interpretivism aspires to attain deep comprehension of human behavior in conjunction with social occurrences (Bell, Bryman & Harley, 2019, pp. 30–33; Eriksson & Kovalainen, 2015, pp. 20–21). However, as the researcher’s focus was on obtaining an objective, overall picture of the phenomenon instead of deeper understanding of individual experiences, the post positivist approach remains the most suitable. What is more, the survey responses form numerical data, making the post positivist approach the most fitting alternative. The survey data encompassing 1011 respondents provides a sufficient sample size for tentative generalizations on possible findings in the statistical analysis, adhering to the positivist position that knowledge stems from systematic measurement of observations (Eriksson & Kovalainen, 2015, pp. 18–19; Bell, Bryman & Harley, 2019, p. 30).

An important caveat in research lies in the generalizability of the results (Bell, Bryman & Harley, 2019). The author has taken care to avoid excessive generalization even while using statistical analysis, as the sample size (N=1011) was, even when favorably calculated, merely 0,3% of the represented population, i.e. all SME entrepreneurs in Finland (Statistics Finland, 2024c). Additionally, a lack of direct access to financial information of respondents necessitated relying on secondary data, i.e. the survey data collected by Kantar Public / Suomen Yrittäjät. Nonetheless, a quantitative research approach enabled the researcher to strive for more generalizable results, which will hopefully add substance to the discourse on YEL reforms.

4.2. Collection and Organization of Data

In academic research, the data analysis comprises either primary or secondary data, both of which contain distinct advantages and challenges. Secondary data analysis entails utilizing data which has been collected by another party for another original purpose. Thus, the data has not been amassed with the focus of serving the researcher’s RQ. The RQ of the researcher must therefore be constructed based on what the data allows for (and not the other way around). It is essential that the researcher is sufficiently familiarized with the data before attempting to analyze it. (University College London, n.d.). The chief advantage of utilizing secondary data for this study was the large scale (N=1011) and

focused expertise (Kantar Public provides top-level data analytics and Suomen Yrittäjät caters to SME entrepreneurs in Finland) for the issue in question. In line with common ethics on secondary data analysis, the researcher took care to maintain transparency and precision while documenting the data collection process.

The entrepreneurial poll (*Yrittäjägallup*) was conducted by Kantar Public on behalf of Suomen Yrittäjät in August 2022. The purpose of the study was to obtain data on the views and opinions of Finnish SMEs on current topics (Kantar Public / Suomen Yrittäjät). The data was collected by Kantar Public over the time period of August 18th–25th, 2022, with the majority of respondents replying from the Suomen Yrittäjät registry via email survey (676 responses), and the rest replying via the Gallup Form internet panel (335 responses). Kantar Public reports that the responses were commensurately stored in the same database for the data analysis, with the confidence interval of the overall results being $\pm 3,1$ percentage points. The total amount of collated responses was 1011, all from SME representatives. (Kantar Public / Suomen Yrittäjät).

Initially, the researcher of this thesis received (on December 4th, 2023) the survey data in the form of 160 PowerPoint slides construed by Kantar Public containing the questions and results of their particular study. 13 of the original 160 PowerPoint slides have been published (see Kantar Public, 2022); the rest were disclosed to the researcher confidentially. Following this, the researcher was sent the data matrix of the study in forms of SPSS and Excel (on February 15th, 2024). Additionally, the researcher received, upon request (on October 23rd, 2024), the original Word-formatted questionnaire used by Kantar Public. All survey materials were password-securely stored on computer throughout the duration of the study.

The survey data set received by the researcher covered a total of twelve themes. To keep the research focus for this study sufficiently narrow, it was considered sensible to limit the analysis to the themes explicitly relating to pension and insurance. Basic demographics were included in the analysis as well. Admittedly, additional themes from the survey data could have been added to the analysis. For instance, the survey contained questions relating to inflation, Covid-19, and the war in Ukraine. Inflation can be considered to impact an entrepreneur's financial solvency. This, in turn, can impact ability and willingness to allocate finances towards YEL payments, ultimately affecting one's actualized pension income and resulting standard of living upon retirement. Likewise, international crises such as Covid-19 and the war in Ukraine can eventually impact Finnish entrepreneurs by affecting inflation. However, one could argue that *all* themes included in the survey relate at least indirectly and to a certain extent to the financial security of entrepreneurs. Therefore, it was deemed

sensible to limit the scope to themes of insurance and pension, which left the researcher with 45 of the original PowerPoint slides provided by Kantar Public to comb through.

Upon having established these parameters, the researcher began a meticulous perusal of these 45 confidentially disclosed slides. The idea was to familiarize herself sufficiently to then be able to select the questions most appropriate and applicable to the RQ. The researcher recorded her observations into Word documents, which can be described as improving throughout the process. The first document contains roughly recorded notes taken the first time the data was studied, ideas for research angles, and tentative categorization of the YEL-related questions. Next, the researcher divided her notes into a document allotted to developing a table for regrouping questions into categories (see Table A.1. in the appendix) and another document for refining the research question.

The researcher elected to use the IBM SPSS statistics program for the analysis. This particular program is provided through Tampere University for students, making it one the researcher was previously familiar with. Additionally, Excel was used when creating figures and tables for the study. As the RQ of this study focuses on the YEL pension scheme and reforms thereof, it was considered meaningful to limit analyzed responses to YEL-insured entrepreneurs. This excluded those who selected “TyEL”, “MyEL”, “JuEL”, or “do not know” as their pension insurance. Additionally, only respondents who were full-time entrepreneurs were included in the analysis, excluding those who selected “not full-time” or “do not know”. This limited the scope to people whose livelihood and pension chiefly depends on their self-employment, ensuring as relevant results as possible. Filtering the cases these ways in SPSS left the researcher with 748 respondents out of the original 1011.

4.3. Description of Data

It should be clarified that the concept ‘underinsurance’ was never explicitly mentioned in the survey data set. Accordingly, the RQ was adjusted to align with what could and could not be concluded based on the data. The researcher nonetheless considered the data set suitable for this study, with the following rationale: Firstly, there is an overall lack of research on the actual concept of ‘underinsurance’ among self-employed persons and the operationalization thereof. Consequently, the theoretical framework for this thesis was constructed upon related concepts. These included elements from insurance theory, entrepreneurship theory, Finnish pension legislation, and behavioral economic dimensions. When combined, these elements create a substantial basis for analyzing the insurance outcome of self-employed persons. Secondly, as mentioned, the research question has been tailored

to suit the available data. Most of the survey questions pertained to the 2022-YEL reform, which was carried out to reduce underinsurance. Accordingly, the RQ appropriately highlights this legislative enforcement of the definition of underinsurance as the research focus. Finally, lack of explicit use of the concept ‘underinsurance’ is not seen as an obstacle to utilizing this particular dataset, as some of the survey questions allude to the concept. An example of this is “I pay sufficiently high YEL insurance” (see Table A.1. in the appendix).

To assist the reader in evaluating the conclusions drawn from the following data analysis, a description of the data is provided. A vast majority (85%) of the respondents were full-time entrepreneurs. The data was structured so that 43% of respondents were sole entrepreneurs, 25% employed 2–4 people, 14% employed 5–9 people, 9% employed 10–19 people, and 9% employed 20 or more people. Out of the sole entrepreneurs, 81% were full-time entrepreneurs. A vast majority (78%) of respondents had been in business for 5 or more years, with equivalent percentage of sole entrepreneurs being 74%. Different regions of Finland were represented somewhat unevenly. Approximately half (51%) of respondents were based in the capital region or Southern Finland in general, 29% in Western Finland, and 20% total in Northern and Eastern Finland. A majority (60%) of the respondents operated in the service sector (consultancy or other services). Other sectors were fairly evenly represented: 10% operated in industry, 13% in trade (wholesale or retail or specialty store), and 11% in construction. 5% of respondents did not know which industry their business related to.

Regarding the various types of insurance, 78% of the respondents were YEL-insured, 12% were TyEL-insured, 3% MyEL-insured, 0% JuEL-insured, and 10% did not know. When compared to the responses polled in May of the same year, the amount of YEL-insured increased from May 2022 (72%) to August 2022 (78%). However, the sample size also changed from May 2022 (N=1022) to August 2022 (N=1011), and the amount of “I don’t know” responses decreased from 13% to 10%. The distribution of YEL-insurance (vs. TyEL, MyEL, JuEL, or “did not know”) was fairly even across company sizes (measured here by employee number), ranging from 77–82%. A slight difference occurred in companies with 10 or more workers, only 70% of whom were YEL-insured.

As for other demographic factors in relation to YEL-insurance, the distributions remained somewhat even, ranging from 74–80% across industry sectors and 74–82% across regions. Variance occurred noticeably (upside-down U shape) when it came to age. A mere 68% of both 18–39 year-olds and 60+ year-olds reported YEL-insurance, whereas 85% of both 40–49 year-olds and 50–59 year-olds reported YEL-insurance. Much of the difference is accounted for by 18% of 60+ year-olds having

selected “do not know” – the implications of which are beyond the scope of this study. Additionally, 18% of age group 18–39 were TyEL-insured, which likewise accounts for much of the variation.

Each of the YEL- and earnings-related questions in the survey had been assessed utilizing a Likert scale of 1–5. The response options for each question ranged from “Completely disagree” (value=1) to “Completely agree” (value=5). A neutral “Neither agree nor disagree” (value=3) was posited in the middle. An additional “I do not know” was included as an option for responding. Demographics and other general data were assessed in two ways. One was via questions containing the options of “Yes”, “No”, and “I don’t know”. For instance, the question “Do you have YEL-insurance” contained such answer alternatives. The other option was response categories provided for the respondent to select their answer from. For instance, the question “Your pensions insurance?” could be answered by selecting from options “YEL-insured” (1), “TyEL-insured” (2), “MyEL-insured” (3), “JuEL-insured” (4), or “I do not know”.

Advanced statistical analyses were not deemed necessary for this study, as the questions and formatting of the survey did not allow for causal interpretations. It was therefore considered suitable to rely on descriptive statistics for the analysis. Descriptive statistics enable a researcher to present data in various ways utilizing graphs and tables (Goos & Meintrup, 2015). The analysis for this study consisted of retrieving simple descriptive statistics such as frequencies directly from the data. Bar charts were then utilized to present the results. The section with regrouped questions resembles qualitative research, with Table A.1. (see appendix) built using the model of Tuomi and Sarajärvi (2013) as inspiration. Nonetheless, the underlying approach remained that of compiling descriptive statistics on the regrouped questions. The study is accordingly considered to fall under quantitative research in its entirety, even with the final section exhibiting traits of qualitative content analysis. As the study excludes more advanced statistics, the likelihood for which the results can be expected to represent the population in question is not determined. The population in question would be all self-employed persons in Finland. The results – intended as indicative rather than conclusive – are presented in conjunction with sources from the theoretical framework to answer the research question.

5. OPERATIONALIZING DEFINITION OF UNDERINSURANCE

The research question for this study was the following: Does enforcement of legal and financial definition of underinsurance among entrepreneurs align with the outlook of self-employed persons in Finland? The themes inspected in the following chapter have been grouped under three subsections. Each subsection constitutes a specific dimension of the theoretical framework to serve the RQ.

YEL Contribution Levels (section 5.1.) presents statistics from a financial perspective.

Disincentives Prior to and Post Reform (5.2.) presents statistics from a legal perspective.

Increased Freedom versus Security (5.3.) presents statistics from a preferential perspective of entrepreneurs regarding autonomy vs. security.

Incorporating each of the abovementioned dimensions enabled the researcher to approach the operationalization of underinsurance in a thorough manner. As previously mentioned, only those respondents who were YEL-insured, full-time entrepreneurs according to the original survey were included when inspecting these themes. Thus, the total number of respondents for each question is N=748, unless otherwise specified.

5.1. YEL Contribution Levels

Firstly, the opinions of entrepreneurs regarding their YEL contributions (prior to the 2022-reform) are demonstrated in below figure (Figure 6).

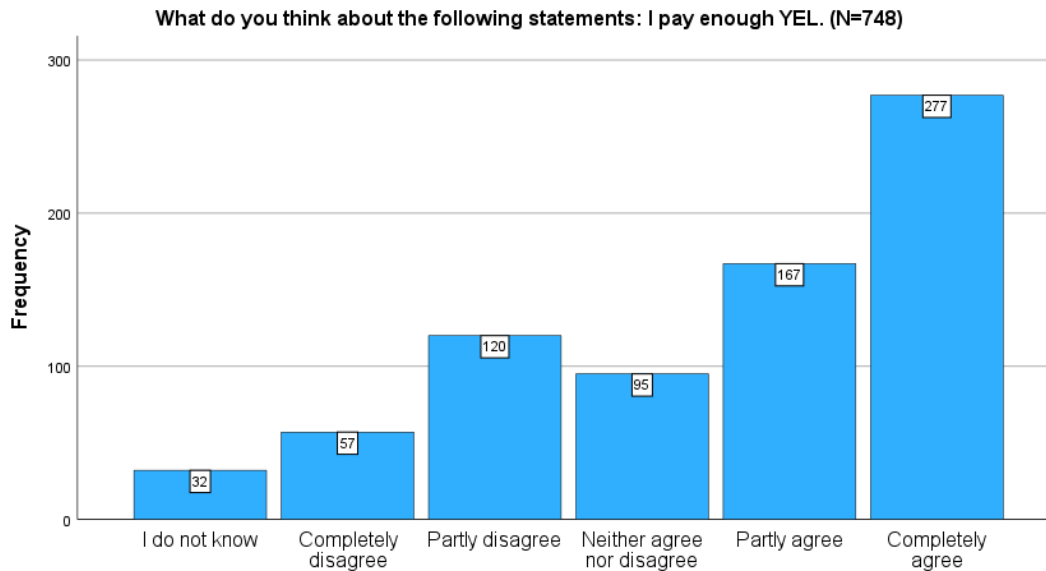


Figure 6. Sufficiency of current YEL contributions

Note: All figures have been directly translated into English.

It appears that out of the full-time, YEL-insured self-employed persons surveyed (N=748), over half (N=444) either partly or completely agreed that they paid enough YEL. Approximately a quarter of respondents (N=177) either partly or completely disagreed that they paid enough YEL. According to actual statistics of the time, approximately 1/3 of entrepreneurs were paying the smallest possible amount of YEL (Finnish Centre for Pensions, 2023a). As evidenced in the literature review, reasoning for inadequate insuring can include viewing YEL as a poor investment (Ministry of Social Affairs and Health, 2022). Entrepreneurs may expect autonomy when it comes to financial preparing for the future, due to the autonomous nature of entrepreneurship as a career path (Kettunen, 1985; Sutinen & Antikainen, 1996; Miller, 2015).

Interestingly, 12.7% (N=95) of respondents displayed a lack of a strong stance towards this question (Figure 6), neither agreeing nor disagreeing, and 4.3% (N=32) owned to not knowing. According to literature, lack of knowledge as to the sufficiency of one's retirement planning is common (Lusardi

& Mitchell, 2011; Rostamkalaei et al., 2022) and particularly detrimental for self-employed persons whose pension preparations potentially require more self-guidance.

Having established an overview of opinions on YEL contributions, the next question pertains to how people in different income groups respond to the previous question of “I pay enough YEL”. While belonging to research literature within another context, the study by Harju et al. (2019) sparks the idea of potential threshold bunching. Indeed, as the literature review demonstrates, cases appear to abound in which self-employed persons take advantage of the option of keeping YEL contributions minimal (Kautto, 2020; FIN-FSA, 2021; HE 102/2022).

The researcher therefore estimates that entrepreneurs who are at the threshold of YEL reporting (€8063.57) or at the threshold for the unemployment limit (€13 246) could be likely to consider themselves to be paying enough YEL. Respondents could also overstate the sufficiency of their current YEL contributions in survey responses, while internally aware of a lack in their payments. This study is naturally limited to the actual replies given to the Kantar Public survey. It bears considering, however, that answers to questions such as “I pay enough YEL” could be motivated by a desire to advocate for YEL contribution levels to remain low.

A caveat to the opinions across income levels is the somewhat uneven representation of income levels. The number of valid responses here was 715. The distribution of respondents across income level groups (see Table 3) should be taken into account when assessing the results of the following crosstabulation. Lowest representation (3.7%, N=27) is found for the second-to-lowest income group of €10 000–13 246. Representation of other income level groups ranges from 8.5% (N=61) to 19.9% (N=142). 7.1% (N=51) of respondents could not or did not wish to say what their annual YEL-income was. The response categories in Table 3 were provided by Kantar Public in their original survey.

Table 3. Representation of income levels

Annual YEL-income (€)	Respondents
8063.57 (<i>lower limit</i>):	100
10 000 – 13 246	27
13 247 (<i>unemployment security threshold</i>) – 19 999	142
20 000 – 24 999	79
25 000 – 29 999	61
30 000 – 39 999	95
40 000 or more	128
Cannot / do not wish to say	51

In any case, the following figure (Figure 7) demonstrates which groups appear to consider their YEL contributions sufficient. Crosstabulation was utilized to visualize the opinions on sufficiency of YEL payments (Y axis) across income levels (X axis). Including precise numbers on each bar in Figure 7 would have been excessively crowded. Therefore, the researcher has merely included the visually indicative figure itself, and reported any notable numbers directly in the text. Extensive interpretations should be avoided, as this figure (Figure 7) is merely indicative of answers within each income group.

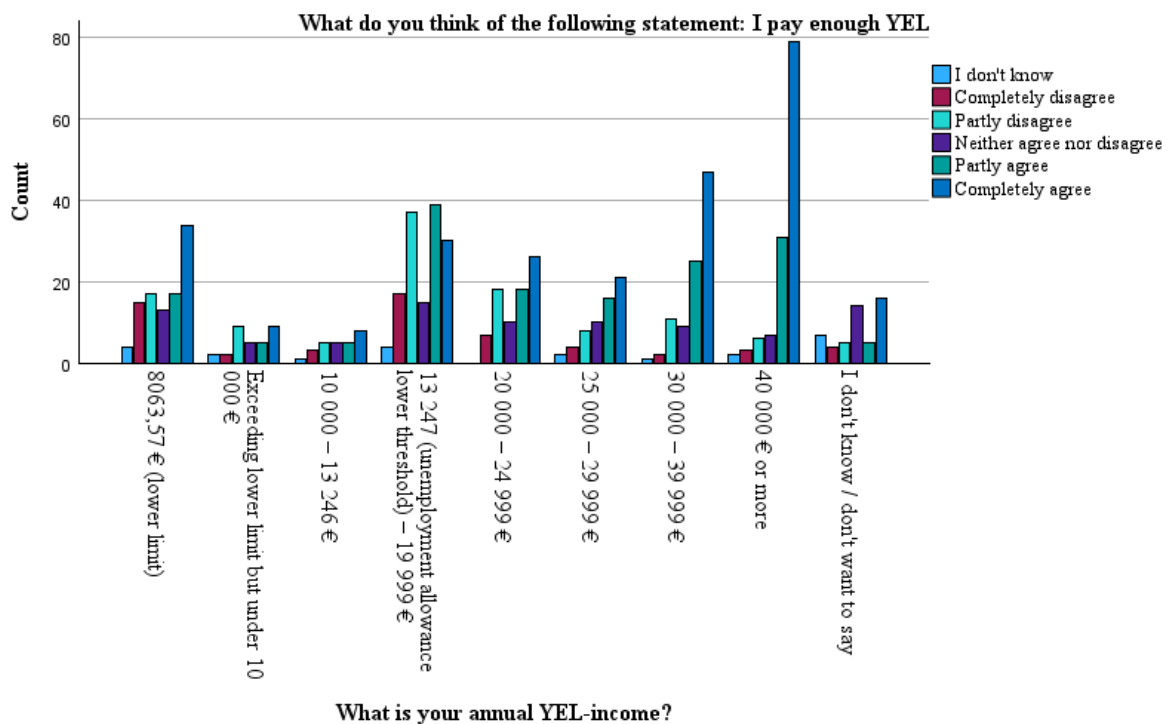


Figure 7. Opinions of YEL payments across income levels

Out of the income levels, the two highest-reporting YEL-income groups stood out in terms of considering their YEL payments sufficient, with 61% (N=79) of the highest-earning (€40 000 or more annually) group insofar as selecting “completely agree”. Other noticeable results from the bar chart are the quarter of respondents from the income group €13 247 (unemployment security threshold) – €19 999 who partly disagreed with the statement that they pay enough YEL, as well as the 12% of respondents from the same group who completely disagreed with the statement.

In 2023, the first rounds of YEL-income verifications were completed, ensuing in the verification of YEL-income of those self-employed persons whose reported annual YEL was lower than €15 000. As a result of this, 83% of said entrepreneurs had to increase their YEL-income, with nearly 11%

being dissatisfied and opting to send additional information of their business operations in order to be granted an exception. (TELA, 2024). When comparing the results from the Kantar survey to the statistics by TELA (2024), it is clear that this particular income group predicted insufficient YEL-payments more than the other income groups. However, even these predictions still fell short of the actual necessitated increases.

Having established the opinions of self-employed persons on their reform-preceding YEL payments, the next step entails assessing whether self-employed persons understood the upcoming possible YEL payment increases due to the reform. The (at the time) upcoming YEL reform can be seen as legal enforcement of the financial definition of underinsurance (see HE 102/2022; Ministry of Social Affairs and Health, 2022).

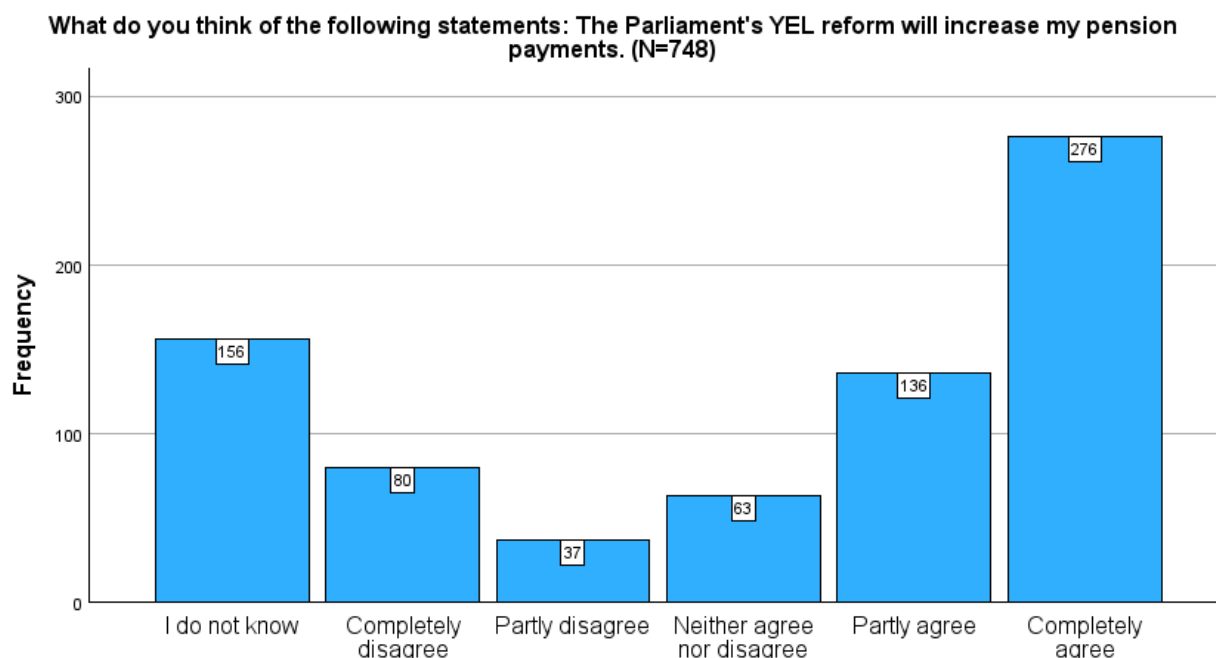


Figure 8. YEL reform and perceived pension payments

When asked whether the YEL reform being discussed in Parliament would increase their YEL payments, 55.1% (N=412) of respondents partly or completely agreed that this would be the case. 15.6% (N=117) partly or completely disagreed, and 20.9% (N=156) did not know. Naturally, due to the lack of access to financial information of individuals, a comparison between the estimates of self-employed persons and the actualized post-reform YEL payment increases could not be conducted. This limits the conclusions that can be drawn.

However, according to statistics by the Finnish Centre for Pensions (2023a), approximately 1/3 of entrepreneurs had been financially underinsured at the time. Consequently, during the first round of inspections in 2023 of the <€15 000 income group, 83% were required to increase said YEL-income (TELA, 2024). This being the case, it seems that the operationalization of YEL underinsurance definition in the form of payment increases was somewhat anticipated by the self-employed.

Indeed, according to statistics by the Finnish Centre for Pensions, the median increase of annual YEL-income for a self-employed person was €4000 for the inspected income group (<€15 000) in 2023. Approximately 58 700 self-employed persons' YEL-reported incomes were included in this round of inspections. €4000 was the maximum amount that YEL-reported income could be increased during this transitional period. (Hägele & Poutiainen, 2024).

5.2. Disincentives Prior to and Post Reform

Next the research question is approached through a legislative and, in particular, (dis)incentive perspective. The purpose is to detect potential disincentives relating to YEL legislation particularly in light of the reform. Does the operationalization of the legal definition of underinsurance discourage self-employed persons from their business endeavors?

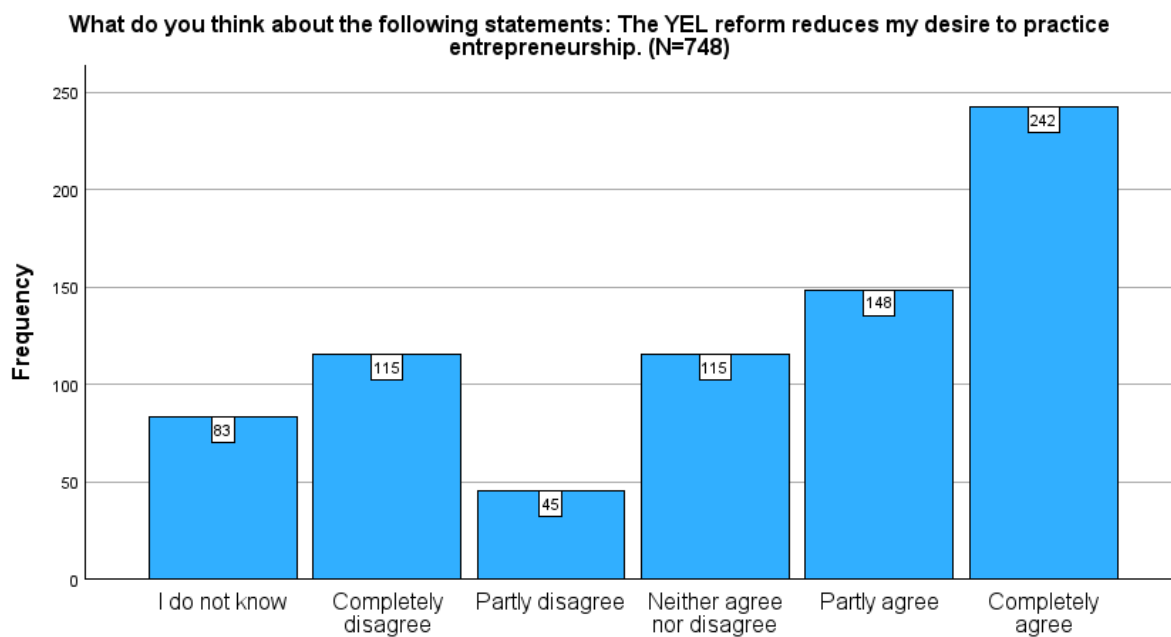


Figure 9. YEL reform and desire to practice entrepreneurship

Note: Translating the question (“YEL-uudistus vähentää halujani yrittää”) posed a challenge, as there did not appear to be an equivalent verb in English for “yrittää” – the verb used in Finnish to describe the practice of entrepreneurship. The author elected to translate the phrase as “to practice entrepreneurship”, to preserve the original meaning.

As evidenced in Figure 9, when asked directly whether the YEL reform reduces the desire to practice entrepreneurship, approximately 52.1% (N=390) either partly or completely agreed. A good fifth of the respondents (21.4%; N=160) disagreed partly or completely that this would be the case. 15.4% (N=115) neither agreed nor disagreed, and 11.1% (N=83) did not know. The question “This reform reduces my desire to practice entrepreneurship” allows for respondents to express disagreement while still intending to continue in their self-employment.

A more direct question for assessing disincentivizing impacts of the reform could have been along the lines of “I may discontinue practicing entrepreneurship if the YEL reform comes to pass”. Naturally, it can be difficult for a respondent to predict his or her course of actions once the potential YEL payment increases are realized. In any case, the responses here are analyzed as speculative, not conclusive. Possible reasons for the reform being felt as disincentivizing could include distrust towards the system, perceived unfairness, as well as a lack of solvency (see Tenhunen, 2008; Salonen, 2015; STM, 2019).

As demonstrated earlier in Figure 4, the number of self-employed persons has been declining since 2021. However, this drop began prior to the initial proposal of the reform and can be a cause of multiple factors. If growth entrepreneurship continues to remain an objective in Finland (see Hyrkkänen, 2009), effects of reforms such as YEL-2022 should be analyzed, along with other contextual factors (see Jensen-Eriksen, 2023).

Having assessed the perceived impact of the YEL reform on the desire to practice entrepreneurship, the next question pertains to whether there are certain groups who feel more affected by the YEL reform than others. Crosstabulation was utilized to visualize the opinions on YEL reform (Y axis) across income levels (X axis). The number of valid cases for this crosstabulation was N=715. The idea of threshold bunching referred to by Harju et al. (2019) was used again as inspiration when estimating results of this statistic. It is hence predicted that income groups at threshold levels of YEL reporting (€8063.57) or at the threshold for unemployment limit (€13 246) would stand out when it comes to their thoughts on the reform.

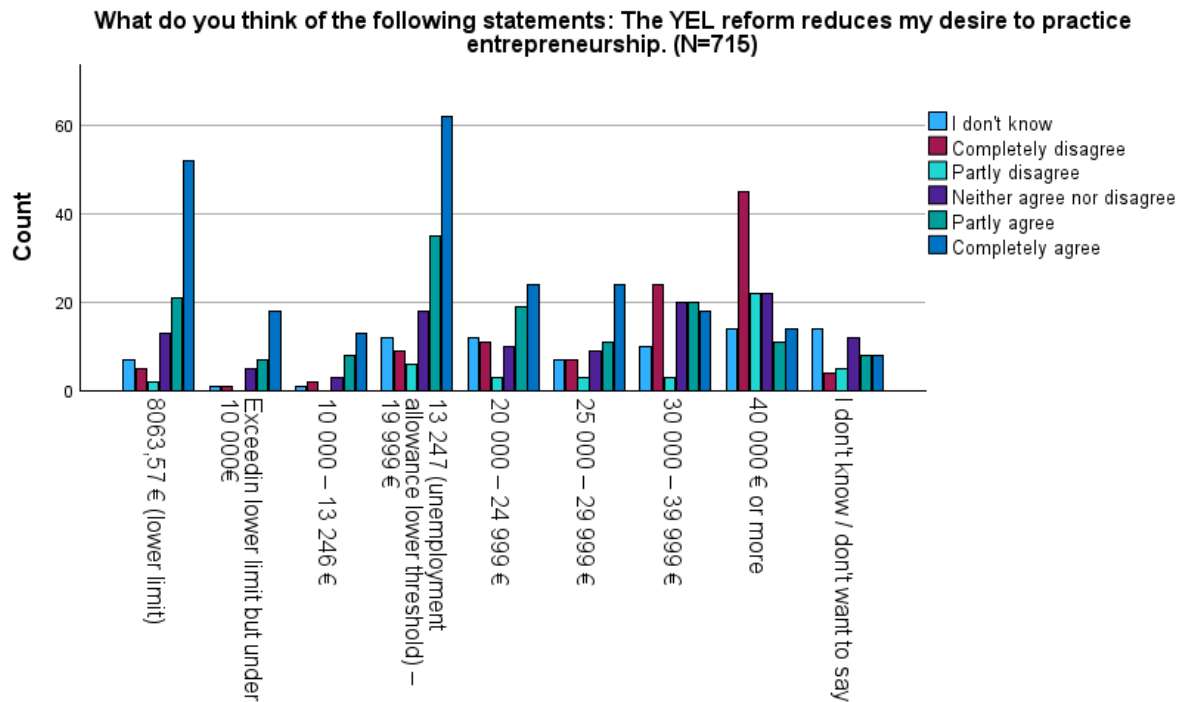


Figure 10. YEL reform and different income groups

The above figure (Figure 10) visualizes responses to YEL reform and desire to practice entrepreneurship (Y axis) across different income levels (X axis). Including precise numbers on each bar in Figure 10 would have been excessively crowded. Therefore, the researcher has merely included the visually indicative figure itself and reported any notable numbers directly in the text. As with the prior crosstabulation of opinions of YEL payments across income levels (Figure 7), the figure here (Figure 10) is merely indicative. Extensive interpretations should therefore be avoided.

Interestingly, the most notable stances visually indeed appear among threshold level groups. Additionally, the highest-reporting YEL-income group (€40 000 or more) stands out visually. Out of the lowest-earning group (threshold level of YEL reporting, i.e. €8063.57), 52% (N=52) completely agreed with the statement of the reform reducing their desire to practice entrepreneurship. Another 21% (N=21) from the same group partly agreed with the statement. Likewise notable is the group between €13 246 (unemployment allowance threshold) and €19 999. In this group, a majority (68%, N=97) either partly or completely felt that the reform would reduce their desire to practice entrepreneurship. A notable feature of the highest-earning group was that 35% (N=45) completely *disagreed* with the statement “YEL reform reduces my desire to practice entrepreneurship”.

While one cannot draw conclusions as to why entrepreneurs from these income levels answered the way they did, possible reasoning can be found in the literature review. YEL being a pay-as-you-go system with a current shortage approximating €500 million (Finnish Centre for Pensions, 2023b) raises the question of perceived fairness among entrepreneurs. If a group can receive pension coverage without contributing sufficiently, this could have a disincentivizing effect. The disincentive issue could possibly go both ways. If one is already contributing adequately to pension coverage, perhaps the idea of YEL contributions being generally more enforced is actually *incentivizing*. (For more on actuarial fairness, see Tenhunen, 2008; Holzmann & Hinz, 2005).

5.3. Increased Freedom versus Security

The following statistics are included to assess whether the operationalization of the legal definition of underinsurance aligns with the viewpoints of entrepreneurs. Examining this entailed regrouping the 16 YEL-system-related questions asked by Kantar Public / Suomen Yrittäjät into categories. The aim was to utilize regrouping to see whether the responses of entrepreneurs remained consistent overall. Additionally, the objective was to obtain data on the viewpoint of entrepreneurs regarding the sufficiency (or lack thereof) of their YEL contributions. The previous descriptive statistics have established context through financial and disincentive perspectives. This final section assesses where the viewpoint of entrepreneurs lands when it comes to entrepreneurial freedom and YEL structures.

For this section, the researcher turned to the work of Tuomi and Sarajärvi (2013) for inspiration. Although intended as a model for content analysis, their model proved useful for regrouping questions in this study. The YEL-related questions were thus grouped into a table (Table A.1. in the appendix) in order to find, initially, subcategories (*alaluokka*), then categories (*yläluokka*), then finally, connecting categories (*yhdistävä luokka*). The idea was to see whether the responses of entrepreneurs were consistent overall for questions within the emerging categories.

To do this, firstly each question was designated to the appropriate subcategory. An example of this would be “I am willing to pay more YEL to get better social security” being subcategorized as “openness to regulation”. Next, the subcategorized themes were combined under overarching categories. An example of this would be all autonomy-related questions being categorized as “entrepreneur’s autonomy”. Overall, the five categories that emerged at this stage were “viewpoint of facts”, “trust vs. mistrust”, “entrepreneur’s solvency”, “entrepreneur’s autonomy”, and “openness to regulation”. Ultimately, as evidenced in the ensuing table (Table A.1. in the appendix), a final

connecting category of freedom <-> security emerged. This connecting category demonstrates the two extremes of a spectrum – in this case, freedom vs. security. This tied in well to the original research question: Does enforcement of legal (as per YEL) and financial definition of underinsurance among entrepreneurs align with the outlook of self-employed persons in Finland? It should be noted that not all 16 questions (see Table A.1. in the appendix) have been included in this section, but only the ones that best serve the research focus.

Firstly, Figure 11 demonstrates the views of the full-time, YEL-insured entrepreneurs on whether they should have more autonomy in social security matters.

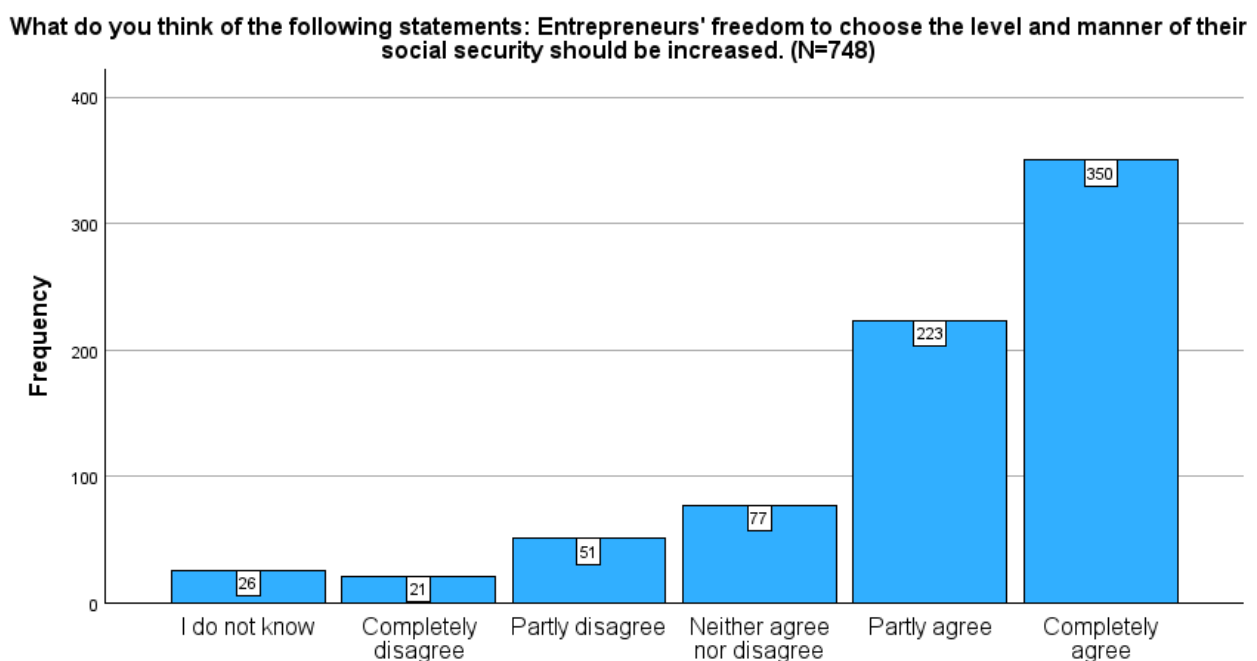


Figure 11. Entrepreneurs' autonomy in choosing social security.

As evidenced, a vast majority (76.6%; N=573) either partly or completely thought that there should be increased freedom in making decisions on their social security. The magnitude of this was probable based on the size of the address collected by Hanén (2022). As the literature review indicates, entrepreneurship can be considered to entail certain autonomy – both freedom and responsibility – when it comes to one's financial situation (Hyrkkänen, 2009; Kettunen, 1985; Cervellati et al., 2019). The extent of entrepreneurial freedom can be considered limited by the mandated insurance structures that one cannot opt out of (see Havakka et al., 2017).

Interestingly, a mere 9.6% (N=72) either partly or completely disagreed with the idea of increased freedom, and an additional 10.3% (N=77) neither agreed nor disagreed. 3.5% (N=26) of respondents did not know (Figure 11).

Next, the question of whether YEL payments should be based on earned income of entrepreneurs is visualized in Figure 12 below.

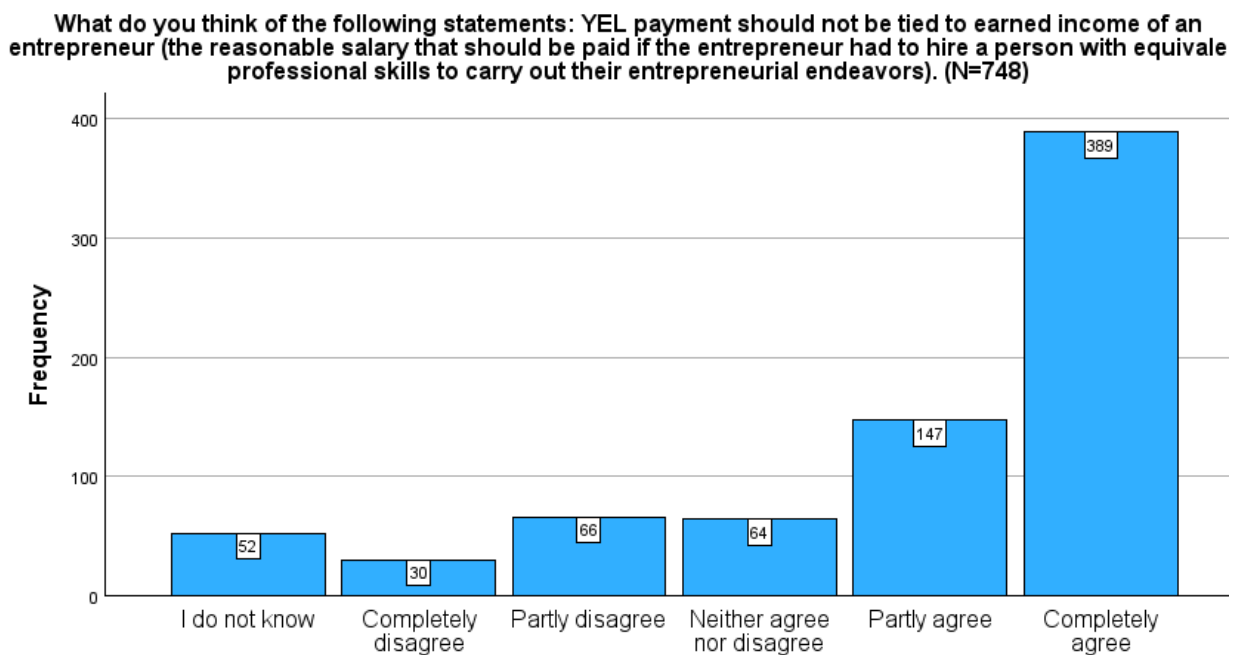


Figure 12. YEL payments based on earned income

When it comes to whether YEL payments should or should not be tied to the earned income of entrepreneurs, the distribution of the answers in Figure 12 is somewhat similar to the previous question (Figure 11) of whether entrepreneurs should be afforded increased freedom in determining their social security. A majority (71.7%) of the respondents would partly or completely agree with their payments not to being tied to earned income, with a little over a tenth (12.8%) either partly or completely disagreeing with the idea. 8.6% neither agreed nor disagreed, and an additional 7.0% did not know their opinion on the matter. As established in the literature, the basis for pension accrual (i.e. the actual YEL payments) for self-employed persons lies in their YEL-income (Rantala & Pentikäinen, 2003; Pärnänen & Sutela, 2020). The primary transformation of the 2022-reform shifts the ultimate decision-making power from entrepreneurs to pension institutions (HE 102/2022; Finlex, 2024b).

The phrasing of the question (in Figure 12) examined here appears to shift the power away from the institutions to re-establish the flexibility originally afforded prior to when underinsurance was legally addressed. The literature review points out the need for flexibility when it comes to entrepreneurs who work solo or whose businesses entail fluctuating income streams (Suomen Yrittäjät in Working Report of STM, 2019). Alternative solutions to using the equivalent salary paid if an entrepreneur hired a person with equal skills could be considered. Nonetheless the shortage of YEL payments and current (increasing) portion of the state (Finnish Centre for Pensions, n.d. -c) would seem to imply that solutions will not necessarily be agreeable to the autonomy-aspiring self-employed.

Based on the results of the previous two statistics, it can be expected that results to question “Pension institutions should more closely monitor YEL-income declarations of entrepreneurs” would emulate the previous two statistics. This would entail a visually opposite distribution of the answers, as the question is phrased differently. Thus, higher disagreement with the question here (Figure 13) would correspond to the higher agreement to the other two questions on entrepreneurial autonomy.

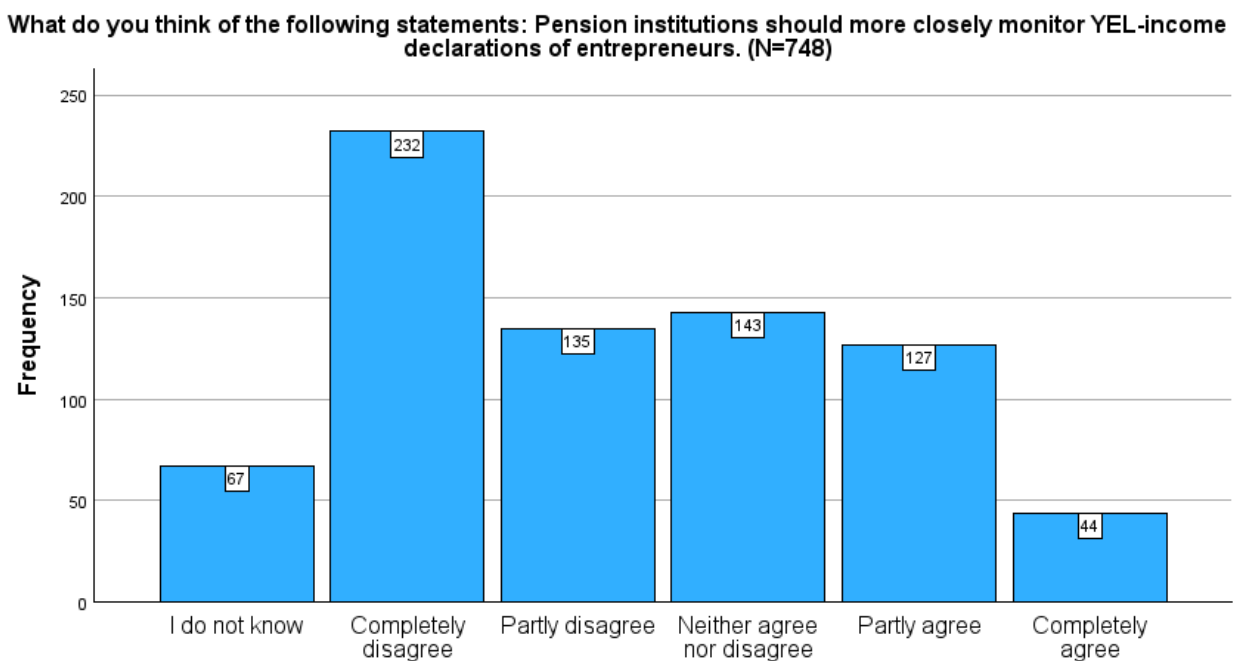


Figure 13. Monitoring of YEL-income declarations

Indeed, it appears that nearly half of the respondents (49.1%) either partly or completely disagree with the idea of pension institutions more closely monitoring their YEL-income declarations.

Approximately a fifth (19.1%) of the respondents neither agreed nor disagreed, and 9.0% of respondents did not know their opinion. A little over a fifth (22.3%) of respondents partly or completely agreed with the idea of pension institutions more closely monitoring their YEL-income declarations. Interestingly, when phrased this way, entrepreneurial freedom was less fervently supported (i.e. 49.1% opposed the idea of increased monitoring) than in the previous questions (where 76.6% thought that there should be increased freedom in social security decisions; and 71.7% thought that their payments should not be tied to earned income).

Results indicate an overall preference of entrepreneurial autonomy in matters of YEL and social insurance. Psychological characteristics possibly influencing the preferences of entrepreneurs should be taken into consideration – is it the drive for entrepreneurship that entails a preference for autonomy? (see Blanchflower & Oswald, 1998; Hyrkkänen, 2009; Ekelund et al., 2005).

As mentioned, freedom and security form a connecting category in the regrouping of questions (Table A.1. in the appendix). The spectrum entails on one end an entrepreneur’s desired autonomy, and on the other, openness to statutory regulation. Having obtained a picture of the viewpoints of entrepreneurs on entrepreneurial autonomy, the remaining statistics visualize whether the viewpoints change when questions assess their openness to regulation.

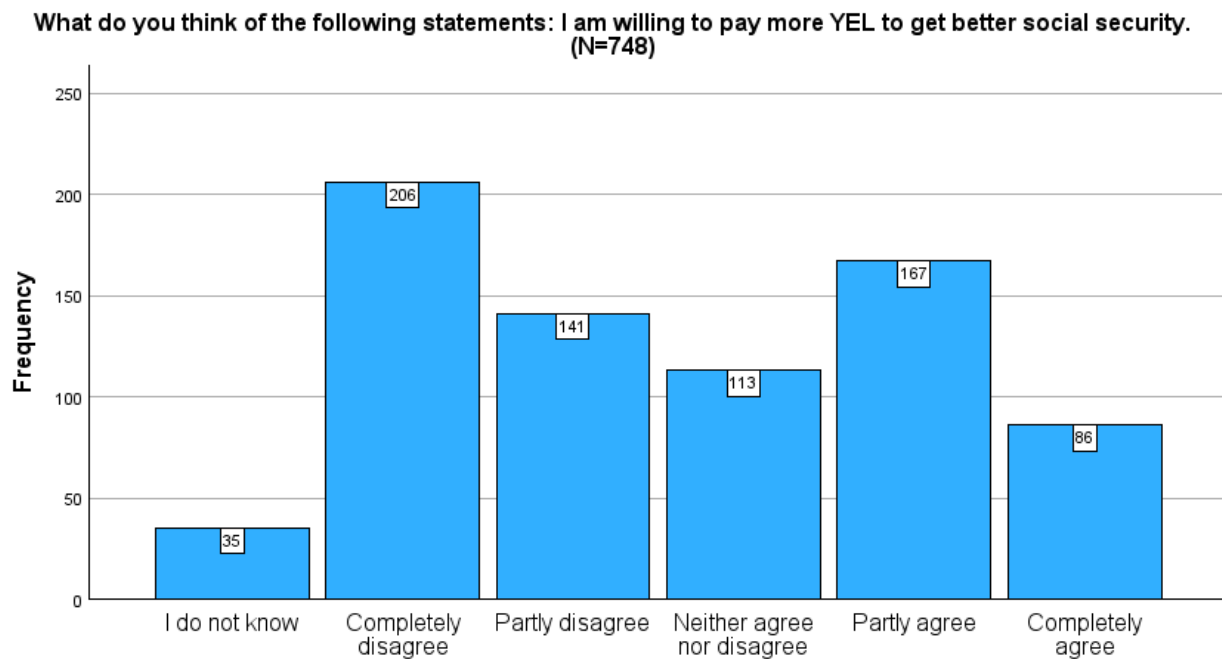


Figure 14. More YEL for better social security

When asked whether they were willing to pay more YEL to improve their social security (Figure 14), a little over a third of respondents (33.8%) partly or completely agreed with the idea. A somewhat high percentage (compared to results of previous questions) of 15.1% neither agreed nor disagreed with the question, and 4.7% of respondents did not know. Nearly half (46.4%) of respondents either partly or completely disagreed with the idea of increasing their YEL contributions to get better social security. In other words, nearly half of the respondents expressed some level of objection to the idea of increased social security through YEL.

It should be noted that the phrasing of the question “I am willing to pay more YEL to get better social security” leaves room for interpretation as to whether this payment increase would be voluntary or legislatively mandated. Phrasing the question differently, for instance “I am willing to pay more YEL, *if so mandated*, to get better social security”, could elicit somewhat different responses. However, as the case of the impending YEL reform was made evident in the survey, it is reasonable to assume that entrepreneurs were likely intended to interpret this question in light of a mandated YEL increase.

The next question is similar to the one before, inviting a more direct stance as to the legislative structure (compare “I am *willing* to pay more...” vs. “The contribution level *should* be raised). The framing remains the same – agreeing with the statement implies openness to regulation, to a certain extent.

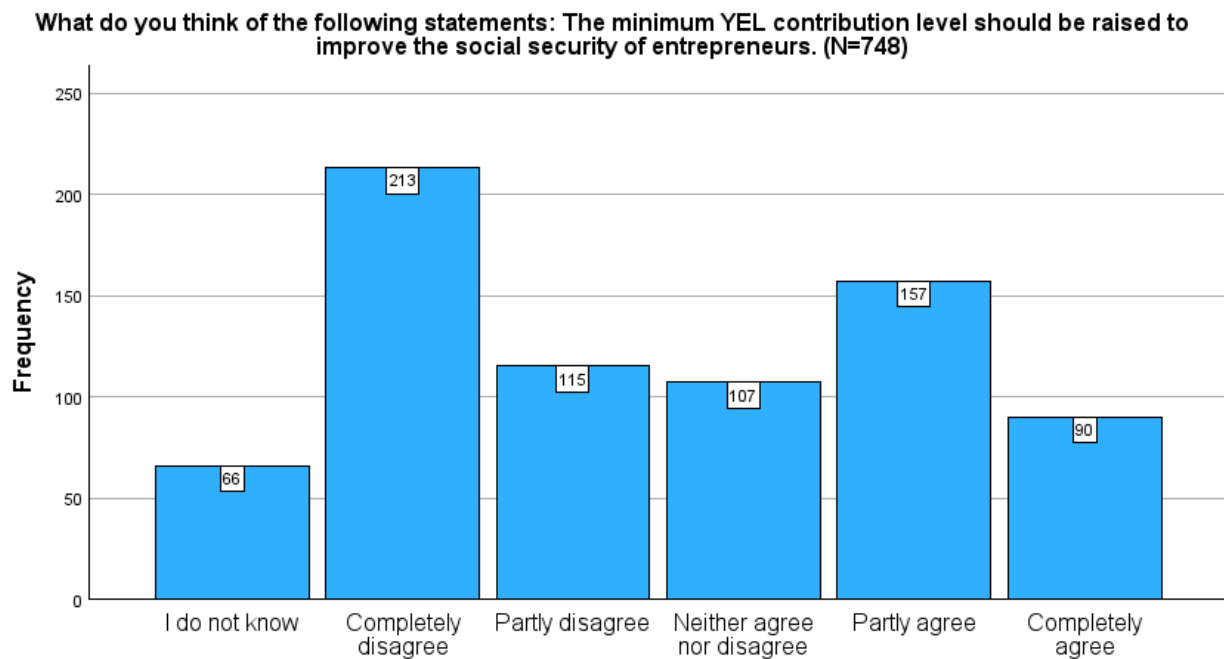


Figure 15. Increased YEL to improve social security

When formulated this way, the distribution of responses in Figure 15 was fairly similar to the previous question (Figure 14), with some differences. Nearly twice the amount of respondents did not know their opinion (8.8% here; 4.7% in previous question). The amount of respondents who neither agreed nor disagreed was fairly similar at 14.3% (15.1% in previous question). Similarly as with the previous question, approximately a third (33.0%) either partly or completely agreed with the idea of increasing YEL contributions to improve social security. Likewise similarly to the previous question – albeit a few percentage points less – 43.9% either partly or completely disagreed with the idea of increasing YEL contributions to improve social security.

Finally, the third question relating to openness to regulation consists of one that was assessed in conjunction with disincentives (see Figure 9). As established, a little over half of the respondents (52.1%) experienced the YEL reform as somewhat disincentivizing, either partly or completely agreeing with the statement. A little over a fifth (21.4%) of respondents did not feel this way, either partly or completely disagreeing with the statement. 15.4% did not agree or disagree, and 11.1% did not know. To summarize, the majority of opinions of entrepreneurs tended to align with increased entrepreneurial autonomy (see Figures 6, 7, 11, 12) and, correspondingly, they tended not to align with increased regulation (see Figures 9, 10, 13, 14, 15).

6. CONCLUSIONS

The final chapter of this thesis presents the key conclusions of the study. In doing so, the research question is answered. Next, ethical considerations of the study are provided. Reliability of the study is evaluated in conjunction with an overall appraisal of the thesis. The chapter concludes with suggestions for future research.

6.1. Underinsured but Autonomous

This section presents the conclusions arrived at as well as offers answers to the research question. The research question for this study was: Does enforcement of legal and financial definition of underinsurance among entrepreneurs align with the outlook of self-employed persons in Finland? The following conclusions are based on the overall results in chapter four.

In order to properly conceptualize underinsurance, the theoretical framework was considered foundational in this study. The framework demonstrates the complexities of the matter, with factors categorized to demonstrate both overlap and interconnectedness of concepts (see Figure 1). The literature review developed around this theoretical framework indicates that the definition of underinsurance with its financial consequences depends on legislation. The 2022 YEL-reform attempts to enforce what the intention of the law appeared to have been all along. Per results of the analysis, operationalization of this definition can be considered somewhat contradictory to the viewpoints of the self-employed.

The first statistics in the analysis highlighted a financial perspective of the theoretical framework. A majority of entrepreneurs appear to lean towards their YEL contributions already being sufficient prior to the 2022-reform. This seems particularly notable among those with the highest YEL-income. Overall, the findings indicate that entrepreneurs were somewhat anticipatory of potential pension payment increases through the reform. Statistics confirm that the reform indeed is causing payment increases, one inspection group at a time (see TELA, 2024). Based on the literature review, executing this reform can be seen as realizing the definition of underinsurance among entrepreneurs.

The next round of statistics highlighted a legal perspective of the theoretical framework. The YEL-reform seems to be perceived as somewhat disincentivizing. Notably, entrepreneurs at threshold income levels and the highest income level take stronger stances towards the issue. This appears as agreeing with (threshold groups) or *disagreeing* with (highest income group) the question of the

reform feeling disincentivizing. Based on the literature review, operationalization of the definition of underinsurance does seem to discourage some self-employed persons in their practice of entrepreneurship. A separate question would be to examine how significant the stances of the groups who feel impacted actually are.

Finally, the last round of statistics visualized a preferential perspective of entrepreneurs. This was done through regrouping questions into a table (see Table A.1 in the appendix). The connecting category of freedom <-> security was used as the perspective to tie in this section with the RQ. For the most part, entrepreneurs seem to desire increased autonomy in matters of their social security. A majority of entrepreneurs seem to feel that their YEL payments should not be tied to earned income. Approximately half of the respondents seem to object to closer monitoring of YEL declarations.

Findings on the question of increasing YEL for increased social security vary depend on the formatting of the questions. When asked whether willing to pay more YEL to get better social security, a third of respondents seem open to the idea and nearly half seem to oppose it. When asked, however, if the YEL contribution level should be raised to improve social security, it appears that entrepreneurs are less sure. Percentage of objection decreased slightly, and percentage of indecision nearly doubled. It would seem that the formatting of questions might play a role to some extent when asking entrepreneurs about regulation and autonomy. Overall, the viewpoints of the self-employed appear to fall closer to 'freedom' on a spectrum of freedom vs. security.

The findings of this study evidence the complexities of the often simplified concept of underinsurance. Decision-makers and other partakers in the continuing debate could benefit from a more informed approach regarding the concept of underinsurance. This study enriches that approach.

In conclusion, it seems that enforcement of the legal and financial definition of underinsurance does *not* align with the overall outlook of self-employed persons on matters of pension and insurance. Many self-employed persons in Finland seem to consider their current YEL contributions sufficient and the 2022-reform somewhat disincentivizing. Overall, the self-employed appear to favor entrepreneurial freedom over increased regulation. This leads to the question of "Will objections to enforcement of the definition of underinsurance lead to an eventual decrease in entrepreneurship?". This merits further research.

6.2. Ethical Considerations and Limitations of Study

As the research paradigms and methodology of quantitative and qualitative research differ, the criteria used to establish trustworthiness accordingly differs, as well. In quantitative research, the traditional criteria for assessing the rigor and trustworthiness are the internal validity, external validity, reliability, and objectivity of a study (Lincoln et al., 1985; cited by Stumpfegger, 2017).

Internal validity refers to the capacity of a study to establish causal relationships between variables, with minimal interference from confounding variables (Stumpfegger, 2017). Naturally, ensuring internal validity within the initial study carried out by Kantar Public / Suomen Yrittäjät was beyond the control of the researcher. While this is a downside to secondary data analysis, it can be mitigated by utilizing a credible source. Indeed, Kantar Public has established itself as a leading company in data analytics. The questionnaire and results of Kantar Public have been delivered to the researcher in their entirety. Such transparency further improves the internal validity of the study.

When it comes to the secondary data analysis, the researcher strove for internal validity by exercising caution in interpreting results. This entailed ensuring that the conclusions drawn were indeed what the descriptive statistics allowed for. Additionally, there is the risk of subjectivity in the questions asked by Kantar Public on behalf of Suomen Yrittäjät in their original survey. Questions can possibly be intended to steer the answers of respondents. The researcher has sought to mitigate this potential risk by regrouping questions in the third section of the data analysis to assess whether there is consistency in the answers regardless of the wording of the questions. Furthermore, any ambiguous phrasing of questions in the original survey has been openly highlighted by the researcher in conjunction with the data analysis.

Finally, as the theoretical framework constitutes a significant role in establishing the definition for underinsurance, the internal validity thereof is likewise important to assess. When developing the theoretical framework, the researcher was careful to test multiple possible alternatives for positioning the concepts. All drafts were meticulously recorded in a notebook. The researcher paid particular attention to justified positioning of the arrows drawn in between concepts. This was to ensure that relationships between concepts were only implied where appropriate.

External validity, for its part, refers to the generalizability of a study, i.e. whether it is representative of the population in question (Trochim, 2006; as cited by Stumpfegger, 2017). As with internal validity, ensuring external validity of the original study was beyond the control of the researcher. Furthermore, the analysis of the researcher included only simple descriptive statistics, reducing the

basis from which conclusions can be drawn. All results are limited to representing Finnish self-employed persons – more specifically, those who are YEL-insured *and* work full-time as entrepreneurs. To improve the external validity of the study, the researcher took care to caution against excessive generalizations of results. The limits of the scope were disclosed in the first chapter.

External validity for the theoretical framework was considered challenging. The relating literature was mostly U.S.A.-based and not limited to the criteria that the researcher used when conducting her empirical analysis. However, the researcher gathers that since the primary purpose was to establish and effectuate a previously insufficiently defined concept, the literature utilized was likely to expand beyond the narrow parameters of the empirical analysis. Indeed, this ended up being the case.

As for the reliability of a study, this refers to the possible repeatability of the test, considered attained if the measure utilized produces the same result, regardless of who conducts the study (Trochim, 2006; as cited by Stumpfegger, 2017). The researcher for this study has used openness and transparency to attain reliability. The data collection and analysis are clearly documented, and the results have been double checked where needed to increase overall reliability. When it comes to the original survey by Kantar Public / Suomen Yrittäjät, there is naturally the question of reliability of the respondents in their answers. However, this survey pertained to topics that specifically concern entrepreneurs. Therefore perhaps the motivation to give one's opinion and make a difference might promote accuracy when responding. As for the theoretical framework, the reliability comes from primarily utilizing peer-reviewed articles or texts from other credible sources, such as the Finnish Centre for Pensions or Finlex.

Ultimately, for a study to be objective, proper distance must be maintained by the researcher as to avoid having their subjective perspective steer the process (Payne & Payne, 2004; as cited by Stumpfegger, 2017). The researcher takes note of her personal interest in business-related issues that have multiple viewpoints in public discussion (see Mäki-Soini, 2021). Potential bias from growing up in a family of entrepreneurs should be taken into consideration when evaluating the objectivity of the researcher. Indeed, the very topic itself emerged from the interest of the researcher in understanding YEL legislation from an entrepreneur's point of view. That being said, this bias is mitigated by an inner curiosity to appreciate different viewpoints on such complex matters. Additionally, the statistical analysis lends itself to increased objectivity, as the answers leave little room for subjective interpretations. Finally, as with her previous thesis, the researcher refrained from developing any strong personal opinion on the matter of insurance among entrepreneurs.

In conducting this study, the researcher has adhered to the research integrity principles set by the European Code of Conduct for Research Integrity, and incorporated in Finland by the Finnish National Board on Research Integrity (TENK, 2023). These include reliability, transparency, respect, and accountability of the research (TENK, 2023). Reliability and transparency of this study already having been discussed, the researcher would like to highlight the measures of respect and accountability taken in this particular study. Respect for the privacy of respondents was naturally ensured through the anonymity of the original survey. Although most of the literature utilized for the theoretical framework were public, some of the articles were obtained from the authors and gratefully included with their permission. Accountability was ensured through correspondence with the researcher's supervisors, whose mentoring and input helped hold the researcher to high standards.

6.3. Suggestions for Future Research

There were several objectives related to this study. Firstly, the researcher intended to problematize prior simplification of underinsurance by demonstrating a lack of proper conceptualization in previous research. The theoretical framework is then intended as the basis for conceptualizing underinsurance through legislative and financial perspectives. Thirdly, the researcher sought to operationalize the definition through entrepreneurial perspectives on relevant themes. In doing so, this study has hopefully helped foster more fruitful conversation on matters of pension and insurance among the self-employed in Finland. In essence, the study is considered to have reached its aim if the reader better understands the complexities surrounding the issue after having read this thesis. Additionally, the results can be seen as indicative of the perspective of entrepreneurs on YEL issues.

Possibilities for future studies include conducting statistical analyses on the significance of the seemingly opposing opinions of entrepreneurs to YEL payment increases. It would be interesting to see whether objections eventually cause some entrepreneurs to quit their self-employment. For instance, as the YEL-income verifications proceed (see TELA, 2024), it could be interesting to see whether a mandated increase in YEL-income correlates with ceasing self-employment. Finally, as the scope of this study was limited to self-employed persons in Finland, it would be interesting to see similar research on insurance of entrepreneurs in other countries for comparative purposes.

REFERENCES

Bibliographic References

- Ahonen, K., Kuivalainen, S., Liukko, J., Nivalainen, S., Palomäki, L.-M., & Polvinen, A. (Eds.). (2019). *Tutkimuksia eläkeläisten toimeentulokokemuksista ja taloudellisesta hyvinvoinnista*. Eläketurvakeskuksen tutkimuksia 02/2019. URN:ISBN:978-951-691-006-5
- Angrisani, M., & Casanova, M. (2021). What you think you know can hurt you: under/over confidence in financial knowledge and preparedness for retirement. *Journal of Pension Economics & Finance*, 20(4), 516–531. <https://doi.org/10.1017/S1474747219000131>
- Bashshur, R., Smith, D. G., & Stiles, R. A. (1993). Defining Underinsurance: A Conceptual Framework for Policy and Empirical Analysis. *Medical Care Research and Review*, 50(2), 199–218. <https://doi.org/10.1177/107755879305000204>
- Bell, E., Bryman, A., & Harley, B. (2019). *Business Research Methods*. (5th ed.). Oxford University Press, Oxford.
- Benzarti, Y., Harju, J., & Matikka, T. (2020). Does Mandating Social Insurance Affect Entrepreneurial Activity? *American Economic Review: Insights*, 2(2), 255–268. <https://doi.org/10.1257/aeri.20190097>
- Blanchflower, D. G., & Oswald, A. J. (1998). What Makes an Entrepreneur? *Journal of Labor Economics*, 16(1), 26–60. <https://doi.org/10.1086/209881>
- Brockhaus, R. H. (1980). Risk taking propensity of entrepreneurs. *Academy of Management journal*, 23(3), 509–520.
- Cervellati, E., Corea, F., & Zanghieri, P. (2019). Entrepreneurs' Behavioural Biases, Risk Misperception and Company Underinsurance. *Risk Governance & Control: Financial Markets & Institutions* 9(4), 49–66. <https://doi.org/10.22495/rgcv9i4p5>
- Chan, S., & Huff Stevens, A. (2008). What you don't know can't help you: Pension knowledge and retirement decision-making. *The Review of Economics and Statistics*, 90(2), 253–266. <https://doi.org/10.1162/rest.90.2.253>
- Decker, R., Haltiwanger, J., Jarmin, R., & Miranda, J. (2014). The Role of Entrepreneurship in US Job Creation and Economic Dynamism. *The Journal of Economic Perspectives*, 28(3), 3–24. <https://doi.org/10.1257/jep.28.3.3>
- Einav, L., & Finkelstein, A. (2011). Selection in Insurance Markets: Theory and Empirics in Pictures. *Journal of Economic Perspectives*, 25(1), 115–138. <https://doi.org/10.1257/jep.25.1.115>
- Ekelund, J., Johansson, E., Järvelin, M.-R., & Lichtermann, D. (2005). Self-employment and risk aversion – evidence from psychological test data. *Labour Economics*, 12(5), 649–659. <https://doi.org/10.1016/j.labeco.2004.02.009>

- Eriksson, P., & Kovalainen, A. (2015). *Qualitative Methods in Business Research* (2nd ed.). SAGE Publications, Ltd. (UK).
- Ewald, F. (1991). Insurance and risk. In Burchell, G., Gordon, C., & Miller, P. (Eds.), *The Foucault effect: studies in governmentality* (pp. 197–211). University of Chicago Press, Chicago.
- Fang, H., Keane, M. P., & Silverman, D. (2008). Sources of Advantageous Selection: Evidence from the Medigap Insurance Market. *Journal of Political Economy*, 116(2), 303–350.
- Goffee, R., & Scase, R. (Eds.). (1987). *Entrepreneurship in Europe: The Social Processes*. Croom Helm, London.
- Goos, P., & Meintrup, D. (2015). *Statistics with JMP: Graphs, descriptive statistics and probability*. Wiley.
- Harju, J. (2013). Voluntary Pension Savings and Tax Incentives: Evidence from Finland. *FinanzArchiv / Public Finance Analysis*, 69(1), 3–29. doi.org/10.1628/001522113X663451
- Harju, J., Matikka, T., & Rauhanen, T. (2019). Compliance costs vs. tax incentives: Why do entrepreneurs respond to size-based regulations? *Journal of Public Economics*, 173, 139–164. <https://doi.org/10.1016/j.jpubeco.2019.02.003>
- Havakka, P., Niemelä, M., & Uusitalo, H. (Eds.). (2017). *Sosiaalivakuutus*. (2nd ed.). Hansaprint Oy, Turenki.
- Holzmann, R., & Hinz, R. P. (2005). *Old-age income support in the 21st century: an international perspective on pension systems and reform* (1st ed.). World Bank.
- Howells, P., & Bain, K. (2007). *Financial markets and institutions* (5th ed.). Pearson Education.
- Huhtanen, R. (2017). *Sosiaalivakuutuksen oikeudellinen perusta*, in Havakka, P., Niemelä, M., & Uusitalo, H. (Eds.), *Sosiaalivakuutus*. (2nd ed.). Hansaprint Oy, Turenki.
- Hyrkkänen, R. (2009). *Onko yrittäjien eläkevakuuttaminen kohdallaan? YEL-työtulon tasotarkastelua eri näkökulmista*. Eläketurvakeskuksen keskustelualoitteita 2009:2. URN:NBN:fi-fe2015112620010
- Hägele, M., & Poutiainen, E. (2024). *YEL-työtulot ja niiden tarkistaminen vuonna 2023*. Eläketurvakeskuksen tilastoja 09/2024. URN:NBN:fi-fe2024091070231
- Ilmonen, I., Kallio, J., Koskinen, J., & Rajamäki, M. (2022). *Johda riskejä. Käytännön opas yrityksen riskienhallintaan* (4th ed.) PunaMusta Oy.
- Kalmi, P., & Ruuskanen, O.-P. (2018). Financial literacy and retirement planning in Finland. *Journal of Pension Economics & Finance*, 17(3), 335–362. <https://doi.org/10.1017/S1474747217000270>
- Kangas, O., & Niemelä, M. (2017). *Riskit, vakuutus ja sosiaalivakuutus*, in Havakka, P., Niemelä, M., & Uusitalo, H. (Eds.), *Sosiaalivakuutus*. (2nd ed.). Hansaprint Oy, Turenki.

- Kettunen, P. (1985). *Yrittäjäkirja* (2nd ed.). Suomen Yrittäjien Keskusliitto.
- Knuuti, J. & Palomurto, M. (2015). *Työtulon ja yritystoiminnan verotettavien tulojen suhdeammatin- ja liikkeenharjoittajilla*, in Salonen, J. (Ed.), *Yrittäjien lakisääteinen eläketurva: työurat, työtulot ja rahoitus*. Eläketurvakeskuksen raportteja, No. 10/2015. <https://urn.fi/URN:ISBN:978-951-691-232-8>
- Knuuti, J., & Vidlund, M. (2006). *Yrittäjien lakisääteinen sosiaaliturva Euroopassa*. Eläketurvakeskuksen katsauksia 2006:1. <https://urn.fi/URN:NBN:fi-fe2015112620142>
- Lavarreda, S. A., Brown, E. R., & Bolduc, C. D. (2011). Underinsurance in the United States: An Interaction of Costs to Consumers, Benefit Design, and Access to Care. *Annual Review of Public Health* (32), 471–482. <https://doi.org/10.1146/annurev.publhealth.012809.103655>
- Lim, S., Oh, T., & Ngayo, G. (2023). Analyzing factors affecting risk aversion: Case of life insurance data in Korea. *Heliyon*, 9(10), e20697–e20697. <https://doi.org/10.1016/j.heliyon.2023.e20697>
- Lincoln, Y. S., Guba, E. G., & Pilotta, J. J. (1985). Naturalistic inquiry. *International Journal of Intercultural Relations*, 9(4), 438–439. [https://doi.org/10.1016/0147-1767\(85\)90062-8](https://doi.org/10.1016/0147-1767(85)90062-8)
- Lusardi, A., & Mitchell, O. S. (2011). Financial literacy around the world: an overview. *Journal of Pension Economics & Finance*, 10(4), 497–508. <https://doi.org/10.1017/S1474747211000448>
- Miller, D. (2015). A Downside to the Entrepreneurial Personality? *Entrepreneurship Theory and Practice*, 39(1), 1–8. <https://doi.org/10.1111/etap.12130>
- Neumann, T. (2021). The impact of entrepreneurship on economic, social and environmental welfare and its determinants: a systematic review. *Management Review Quarterly*, 71(3), 553–584. <https://doi.org/10.1007/s11301-020-00193-7>
- OECD (2016), PISA 2015 Assessment and Analytical Framework: Science, Reading, Mathematic and Financial Literacy, PISA, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264255425-en>
- OECD. (2017). *Entrepreneurship at a glance 2017*. OECD Publishing, Paris, https://doi.org/10.1787/entrepreneur_aag-2017-en
- Outreville, J. F. (1998). *The built environment*. Springer Science & Business.
- Parker, S. C. (2004). *The Economics of Self-Employment and Entrepreneurship* (1st ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9780511493430>
- Payne, G., & Payne, J. (2004). *Key Concepts in Social Research* (1st ed.). SAGE Publications, Limited. <https://doi.org/10.4135/9781849209397>
- Pellikka, T., Peilimö, P., Puntari, P., & Vaitomaa, M. (2020). *Omaisuuuden vakuuttaminen*. Hansaprint Oy, Turenki.

- Pietiläinen, S. (2005). *Kun yrittänyttä vakuutukseen laitettiin. Yrittäjien eläkelain synty ja varttuminen*. Eläketurvakeskuksen keskustelualoitteita 2005:1. <https://urn.fi/URN:NBN:fi-fe2015112620038>
- Power, L., & Rider, M. (2002). The effect of tax-based savings incentives on the self-employed. *Journal of Public Economics*, 85(1), 33–52. [https://doi.org/10.1016/S0047-2727\(01\)00092-5](https://doi.org/10.1016/S0047-2727(01)00092-5)
- Pärnänen, A., & Sutela, H. (2020). *Self-Employed Persons in Finland 2017*. Statistics Finland. <https://urn.fi/URN:ISBN:978-952-244-632-9>
- Rantala, J., & Pentikäinen, T. (2003). *Vakuutusoppi*. Vammalan kirjapaino Oy, Vammala.
- Rautkallio, H. (2015). *Idässä kiinni, länteen kallellaan. USA ja Suomi 1944–1958*. Docendo Oy.
- Ritola, S., & Väänänen, N. (2023). *Understanding Finnish Pensions*. SKS Kirjat. <https://urn.fi/URN:NBN:fi-fe202401051525>
- Rostamkalaei, A., Nitani, M., & Riding, A. (2022). Self-employment, financial knowledge, and retirement planning. *Journal of Small Business Management*, 60(1), 63–92. <https://doi.org/10.1080/00472778.2019.1695497>
- Salonen, J. (2015). *Yrittäjän lakisäätäinen eläketurva – työurat, työtulot ja rahoitus*. Eläketurvakeskuksen raportteja, No. 10/2015. <https://urn.fi/URN:ISBN:978-951-691-232-8>
- Salonen, J., Koskinen, L., & Nummi, T. (2020). The risk of under-insurance in the Finnish statutory pension scheme for self-employed workers: A trajectory analysis. *International Social Security Review*, 73(4), 25–48. <https://doi.org/10.1111/issr.12249>
- Setia, S. (2018). Personality profile of successful entrepreneurs. *Journal of Economics, Business & Accountancy Ventura (Online)*, 21(1), 13–23. <https://doi.org/10.14414/jebav.v21i1.1004>
- Sievänen, M., (2001). *Työntekosuhteen määrittely työeläkelakien soveltamisessa*. In Tuominen, E. (Ed.). *Muuttuva työ ja eläketurva*. Eläketurvakeskuksen tutkimuksia 2001:1. URN:NBN:fi-fe2015112619961
- Spence, M., & Zeckhauser, R. (1971). Insurance, Information, and Individual Action. *The American Economic Review*, 61(2), 380–387.
- Sutinen, M., & Antikainen, A. (1996). *PK-yrittäjän käsikirja*. Kauppakaari Oy, Helsinki.
- Taffler, R., & Tuckett, D. (2010). Emotional Finance: The Role of Unconscious in Financial Decisions. In Baker, H. K. & Nofsinger, J. R. (Eds.), *Behavioral Finance*. Hoboken, NJ: John Wiley and Sons, (pp. 94–114.)
- Tenhunen, S. (2008). *Kannustimet ja riskit eläketurvassa. Taloustieteen näkökulma*. Eläketurvakeskuksen keskustelualoitteita 2008:5. <https://urn.fi/URN:NBN:fi-fe2015112620017>

- Thaler, R. H., & Benartzi, S. (2004). Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving. *Journal of Political Economy*, 112(1). <https://doi.org/10.1086/380085>
- Thaler, R. H., & Benartzi, S. (2013). *Behavioral Economics and the Retirement Savings Crisis*. Science. <https://doi.org/10.1126/science.1231320>
- Tucker, I. B. (1988). Entrepreneurs and Public-Sector Employees: The Role of Achievement Motivation and Risk in Occupational Choice. *The Journal of Economic Education*, 19(3), 259–268. <https://doi.org/10.1080/00220485.1988.10845270>
- Tuomi, J., & Sarajärvi, A. (2018). *Laadullinen tutkimus ja sisällönanalyysi* (Uudistettu laitos.). Tammi.
- Uusitalo, H. (2017). *Eläkevakuutus*, in Havakka, P., Niemelä, M., & Uusitalo, H. (Eds). *Sosiaalivakuutus*. (2nd ed.). Hansaprint Oy, Turenki.
- Uusitalo, R. (2001). Homo entrepreneurus? *Applied Economics*, 33(13), 1631–1638. <https://doi.org/10.1080/00036840010015778>
- Van Praag, C. M., & Cramer, J. S. (2001). The Roots of Entrepreneurship and Labour Demand: Individual Ability and Low Risk Aversion. *Economica (London)*, 68(269), 45–62. <https://doi.org/10.1111/1468-0335.00232>
- Vogt, W. P. (2011). *SAGE quantitative research methods*. SAGE.
- Ward, A. (2006). The Concept of Underinsurance: A General Typology. *Journal of Medicine and Philosophy*, 31(5), 499–531. <https://doi.org/10.1080/03605310600912691>

Legal References

- Finlex. (2024a). *Yrittäjän eläkelaki* (YEL 22.12.2006/1272). Finlex.
- Finlex. (2024b). *Laki Yrittäjän eläkelain muuttamisesta* (YEL 1157/2022). Finlex.
- Finlex. (2024c). *Suomen Perustuslaki* (YEL 11.6.1999/731). Finlex.
- Finlex. (2024d). *Maatalousyrittäjän eläkelaki*. (MyEL 1280/2006). Finlex.
- Finnish Government. (2024). *Selvityshenkilö kartoittaa yrittäjien eläkejärjestelmän kehittämistarpeita*. Retrieved January, 2025, from: <https://valtioneuvosto.fi/-/1271139/selvityshenkilo-kartoittaa-yrittajien-elakejarjestelman-kehittamistarpeita>
- Finnish Tax Administration. (2019). *Wages or trade income*. Retrieved November, 2024, from: <https://www.vero.fi/en/businesses-and-corporations/taxes-and-charges/being-an-employer/wages-or-trade-income/>

- Finnish Tax Administration. (2023). *Light entrepreneurs – how to take care of taxes*. Retrieved November, 2024, from: <https://www.vero.fi/en/businesses-and-corporations/business-operations/setting-up-a-business/light-entrepreneur/>
- Mela. (2024). *Maatalousyrittäjän vakuuttaminen*. The Farmers' Social Insurance Institution Mela. Retrieved September, 2024, from: <https://www.mela.fi/maatalousyrittajat/maatalousyrittajan-vakuuttaminen/>
- Ministry of Finance. (2022). *State Budget Proposal for 2024*. Retrieved January, 2025, from: <https://budjetti.vm.fi/indox/sisalto.jsp?year=2024&lang=fi&maindoc=/2024/tae/valtiovarainministerionKanta/valtiovarainministerionKanta.xml&opennode=0:1:251:1143:1219:>
- Ministry of Social Affairs and Health. (n.d.). *Statutory insurance*. Retrieved October, 2024, from: <https://stm.fi/en/statutory-insurance>
- Ministry of Social Affairs and Health. (2019). *Yrittäjän työeläketurvan kehittäminen. Työryhmän raportti 2019:23*. STM. <http://urn.fi/URN:ISBN:978-952-00-4054-3>
- Ministry of Social Affairs and Health. (2022). Committee report StVM 32/2022 vp -HE 102/2022 vp. *Hallituksen esitys eduskunnalle laeiksi yrittäjän eläkelain ja eräiden muiden lakien muuttamisesta*. Retrieved February, 2024, from: https://www.eduskunta.fi/FI/vaski/Mietinto/Sivut/StVM_32+2022.aspx
- Parliament of Finland. (2022). *Hallituksen esitys eduskunnalle laeiksi yrittäjän eläkelain ja eräiden muiden lakien muuttamisesta*. (HE 102/2022 vp). Retrieved January, 2024, from: https://www.eduskunta.fi/FI/vaski/HallituksenEsitys/Sivut/HE_102+2022.aspx
- Parliament of Finland. (2023). *Hallituksen esitys eduskunnalle työeläkelakien ja maatalousyrittäjän työtapaturma- ja ammattitautilain muuttamista koskevaksi lainsäädännöksi*. (HE 27/2023 vp). Retrieved January, 2024, from: https://www.eduskunta.fi/FI/vaski/HallituksenEsitys/Sivut/HE_27+2023.aspx
- Parliament of Finland. (2024). *Processing records of case HE 102/2022 vp*. Retrieved February, 2024, from: https://www.eduskunta.fi/FI/vaski/KasittelytiedotValtiopaivaasia/Sivut/HE_102+2022.aspx

Other References

- Buchholz, K. (2021). *These countries spend the most, and the least, on social benefits*. World Economic Forum. Retrieved December, 2023, from: <https://www.weforum.org/agenda/2021/02/social-spending-highest-lowest-country-comparison-oecd-france-economics-politics-welfare/>
- European Commission. (n.d.). *SME definition*. Internal Market, Industry, Entrepreneurship and SMEs. Retrieved December, 2023, from: https://single-market-economy.ec.europa.eu/smes/sme-fundamentals/sme-definition_en

- FIN-FSA, Financial Supervisory Authority. (2021). *Finanssivalvonnan teema-arvio Yrittäjän eläkelain (YEL) mukaisen vakuutuksen toimeenpanosta*. Retrieved March, 2024, from: <https://www.finanssivalvonta.fi/tiedotteet-ja-julkaisut/valvottavatiedotteet/2021/finanssivalvonnan-teema-arvio-yrittajan-elakelain-yel-mukaisen-vakuutuksen-toimeenpanosta/>
- Finnish Centre for Pensions (n.d. -a). *Statistics on Pensioners in Finland*. Eläketurvakeskus. Retrieved February, 2024, from: <https://www.etk.fi/en/research-statistics-and-projections/statistics/all-pension-recipients/>
- Finnish Centre for Pensions. (n.d. -b). *Pension Contributions*. Eläketurvakeskus. Retrieved February, 2024, from: Pension Contributions - Finnish Centre for Pensions (etk.fi)
- Finnish Centre for Pensions. (n.d. -c). *Yrittäjien eläkemaksut YEL ja MYEL*. Eläketurvakeskus. Retrieved January, 2024, from: <https://www.etk.fi/suomen-elakejarjestelma/rahoitus-ja-sijoitustoiminta/tyoelakemaksut/yrittajien-elakemaksut-yel-ja-myel/>
- Finnish Centre for Pensions. (2023a). *Voimassa olevista ja alkaneista YEL-vakuutuksista*. Eläketurvakeskus. Retrieved January, 2025, from: <https://www.etk.fi/wp-content/uploads/2023/05/voimassaolevista-ja-alkaneista-yel-vakuutuksista-2022-1.pdf>
- Finnish Centre for Pensions. (2023b). *YEL-eläkkeiden kustannustenjako ja YEL:n valtion osuus*. Eläketurvakeskus. Retrieved March, 2024, from: <https://www.etk.fi/suomen-elakejarjestelma/rahoitus-ja-sijoitustoiminta/tyoelakkeiden-kustannustenjako/yel-elakkeiden-kustannustenjako/>
- Finnish Centre for Pensions. (2024a). *Self-employed*. Eläketurvakeskus. Retrieved March, 2024, from: <https://www.etk.fi/en/finnish-pension-system/pensions/pension-coverage-and-insurance/self-employed/>
- Finnish Centre for Pensions. (2024b). *Usein kysyttyä YEL-vakuuttamisesta*. Eläketurvakeskus. Retrieved February, 2024, from: <https://www.etk.fi/suomen-elakejarjestelma/elaketurva/tyoelaketurvan-kattavuus-ja-vakuuttaminen/usein-kysyttya-yel-vakuuttamisesta/>
- Hanén, L. (2022). Petition. *Vaadimme hallituksen yrittäjän eläkelain muutosta koskevan esityksen (HE 102/2022 vp) kumoamista ja uudelleen käsittelyä*, Adressit.com. Retrieved February, 2024, from: https://www.adressit.com/vaadimme_hallituksen_yrittajan_elakelain_muutosta_koskevan_esityksen_he_1022022_vp_kumoamista_ja_uudelleenkäsittelya
- Hanninen, E. (2020). *Yrittäjä ja sosiaaliset henkilöriskit. Yrittäjien näkemykset eläkejärjestelmästä ja varautuminen sosiaalisilta henkilöriskeiltä*. Master's Thesis, Tampere University. <https://urn.fi/URN:NBN:fi:tuni-202001291642>
- Haverinen, S. (2015). *Riskin kantamista vai siirtämistä? – Tutkimus itsensätyöllistäjän henkilöriskien hallinnasta*. Master's Thesis, Tampere University. <https://urn.fi/URN:NBN:fi:uta-201509212299>

- Huttunen, H. (2023). *Yrittäjän eläkelain uudistuksen mahdolliset vaikutukset*. Bachelor's thesis, Metropolia University of Applied Sciences. <https://urn.fi/URN:NBN:fi:amk-2023051811707>
- Ilmarinen. (n.d.). *YEL-maksut ja laskuasiat*. Keskinäinen Eläkevakuutusyhtiö Ilmarinen. Retrieved October, 2024, from: <https://www.ilmarinen.fi/yrittaja/yel-vakuutus/yel-maksut-ja-laskuasiat/>
- Ilmarinen. (2022). *Which insurances are mandatory for an entrepreneur?* Keskinäinen Eläkevakuutusyhtiö Ilmarinen. Retrieved November, 2024, from: <https://www.ilmarinen.fi/en/current-topics/news-and-articles/2022/mandatory-insurances-for-entrepreneurs/>
- Jensen-Eriksen, N. (2023). Yrityshistoria ja kasvuyrittäjyys. *Annales Academiae Scientiarum Fennicae, 1*, 76–95. <https://doi.org/10.57048/aasf.130114>
- Kantar Public. (2022). *Yrittäjägallup elokuu 2022*. Slides with compiled results of survey by Kantar TNS Oy. Retrieved December, 2023, from: <https://www.yrittajat.fi/app/uploads/public/2022/09/yrittajagallup-yel.pdf>
- Kauhanen, A. (2004). *Yrittäjien ansiot, työajat ja työkuormitus: Selvitys ekonomien ja insinöörien yrittäjyydestä*. Elinkeinoelämän tutkimuslaitos. Keskusteluaiheita No. 960.
- Kautto, M. (2020). YEL-työtulo – mille tasolle yrittäjän eläkevakuutus pitäisi asettaa? Finnish Centre for Pensions Blog. Retrieved May, 2025, from: <https://www.etk.fi/blogit/yel-tyotulo-mille-tasolle-yrittajan-elakevakuutus-pitaisi-asettaa/>
- Koh, B. S., & Mitchell, O. S. (2019). Retirement Preparedness and Financial Literacy in Singapore: How Do the Self-Employed Compare? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3535917>
- Koski, H-S. (2019). *Yrittäjien alivakuuttaminen ja sosiaaliturvan tuntemus suomalaisessa eläkejärjestelmässä*. Master's thesis, Helsinki University. <http://urn.fi/URN:NBN:fi:hulib-201906132867>
- Kosonen, M. (2020). *YEL:n ja MYEL:n sosiaalinen ja taloudellinen kestävyys*. Masters' thesis, Tampere University. <https://urn.fi/URN:NBN:fi:tuni-202004223540>
- Kovalainen, A. (2003). *Yrittäjyyden sukupuolen mukaiset jaot 2000-luvulla*. Hyvinvointikatsaus 4/2003.
- Law, J., & Smullen, J. (Eds.). (2008). *A Dictionary of Finance and Banking* (4th ed.). Oxford University Press. Retrieved February, 2025, from: <https://www.oxfordreference.com/display/10.1093/acref/9780199229741.001.0001/acref-9780199229741>
- Mäki-Soini, K. (2021). *Corporate social responsibility from the perspective of limited liability companies*. Bachelor's thesis, Arcada University of Applied Sciences. <https://urn.fi/URN:NBN:fi:amk-2021052611336>

- Official Statistics of Finland (OSF). (2024a). *Enterprise openings and closures [online publication]*. ISSN=1799-2346. Helsinki: Statistics Finland [Referenced 23.12.2024]. Access method: <https://stat.fi/en/statistics/aly>
- Official Statistics of Finland (OSF). (2024b). *Stock of enterprises, enterprise openings and closures [online publication]*. ISSN=1799-2346. Helsinki: Statistics Finland [Referenced: 23.12.2024]. Access method: <https://stat.fi/en/statistics/aly>
- Official Statistics of Finland (OSF). (2024c). *Labor force survey [online publication]*. ISSN=1798-7830. Helsinki: Statistics Finland [Referenced: 23.12.2024]. Access method: <https://stat.fi/julkaisu/cln01x1oukcgd0cutlb21ovup>
- Pension Act Service. (2025a). *YEL- ja MYEL-eläkkeiden kokonaisrahoitus prosentteina suhteessa työtuloihin*. Eläketurvakeskus. Retrieved March, 2025, from: <https://www.telp.fi/perusteet/aikasarjat-ja-laskentamuistiot/yel-ja-myel-vakuutusmaksuprosentit/>
- Pension Act Service. (2025b). *Indeksiluvut eri vuosina*. Eläketurvakeskus. Retrieved February, 2025, from: https://www.telp.fi/indeksi/indeksiluvut_eri_vuosina/
- Pärnänen, A. (2022). *Yrittäjien työllisyys toipunut hyvin koronasta – tietyillä toimialoilla työllisyys kuitenkin edelleen heikompi*. Statistics Finland. Retrieved March, 2025, from: <https://stat.fi/tietotrendit/artikkelit/2022/yrittajien-tyollisyys-toipunut-hyvin-koronasta-tietyilla-toimialoilla-tyollisyys-kuitenkin-edelleen-heikompi>
- Statistics Finland. (2024a). *Yksinyrittäjien määrä väheni vuonna 2023*. Retrieved February, 2025, from: <https://www.stat.fi/uutinen/yksinyrittajien-maara-vaheni-vuonna-2023>
- Statistics Finland. (2024b). *Yritysten rakenne- ja tilinpäätöstilasto [online publication]*. ISSN=2342 6217. Helsinki: Tilastokeskus. Retrieved February, 2025, from: <https://stat.fi/tilasto/yrti>
- Statistics Finland. (2024c). *Vuonna 2023 työvoimaa eli työllisiä ja työttömiä enemmän kuin edellisvuonna*. Retrieved January, 2025, from: <https://stat.fi/julkaisu/cln01x1oukcgd0cutlb21ovup>
- Statistics Finland. (2025). *Yrittäjä*. Definitions. Retrieved March, 2025, from: <https://stat.fi/meta/kas/yritlkm.html>
- Stumpfegger, E. (2017). *Trustworthiness of Research*. Munich Business School. Retrieved January, 2025, from: <https://www.munich-business-school.de/insights/en/2017/trustworthiness-of-research/>
- Suomen Yrittäjät. (2007). *Yrittäjien tulot ja verot vuodelta 2005 maksuunpannussa verotuksessa*. Retrieved May, 2025, from: https://www.yrittajat.fi/app/uploads/public/2021/09/yrittajientulot_verot2007.pdf
- TENK. (2023). Finnish National Board on Research Integrity, Tutkimuseettisen neuvottelukunnan HTK-ohje 2023. Retrieved March, 2025, from: https://tenk.fi/sites/default/files/2023-05/RI_Guidelines_2023.pdf

- The Finnish Pension Alliance TELA. (2024). *Noin 83 prosenttia 56 000 yrittäjästä sai YEL-maksuunsa korotuksen lakiuudistuksen jälkeen*. TELA. Retrieved January, 2025, from: <https://www.tela.fi/2024/01/10/noin-83-prosenttia-56-000-yrittajasta-sai-yel-maksuunsa-korotuksen-lakiuudistuksen-jalkeen/>
- Toivakka, T. (2023). *YEL-Vakuutuksen alivakuuttaminen ja siihen johtavat tekijät Työeläkeyhtiö X:ssä*. Master's thesis, Häme University of Applied Sciences. <https://urn.fi/URN:NBN:fi:amk-202302272865>
- Trochim, W. M. (2006). *Social Research Methods*. Retrieved May, 2025, from Research Methods Knowledge Base: <https://www.socialresearchmethods.net/>
- Työeläke.fi. (2024). *Pensions for the self-employed*. Finnish Centre for Pensions. Retrieved January, 2024, from: <https://www.tyoelake.fi/en/pensions-for-the-self-employed/what-is-yel-income/>
- University College London. (n.d.). *Secondary data analysis*. Retrieved January, 2025, from: <https://ethics.grad.ucl.ac.uk/forms/Secondary-data-analysis-file-note.pdf>
- Varjonen, S. (2023). *YEL:n uudistaminen säilyy politiikan asialistalla*. Varma Mutual Pension Insurance Company. Retrieved December, 2024, from: <https://www.varma.fi/en/this-is-varma/>

APPENDIX

Table A.1. YEL-related questions regrouped, cultivated from model by Tuomi & Sarajarvi (2013).

Claim	Subcategory (<i>alaluokka</i>)	Category (<i>yläluokka</i>)	Connecting category (<i>yhdistävä luokka</i>)	
-YEL contributions affect other social security along with pensions	viewpoint of fact	viewpoint of facts		
-YEL payments are tax deductible	viewpoint of fact			
-The state pays part of the pensions of entrepreneurs	viewpoint of fact			
-I trust the current YEL system	trust (entrepreneur to state)	trust <-> mistrust		
-Pension companies should trust the entrepreneur's YEL-declared income	trust (state / pension institution to entrepreneur)			
-Determination of [YEL] income is arbitrary	trust (lack thereof)			
-I cannot afford to pay sufficient YEL contributions	solvency (current, negative)	entrepreneur's solvency		
-I cannot afford to increase my YEL contributions	solvency (future, negative)			
-Parliament's YEL reform will increase my pension payments	solvency (future)			
-I pay enough YEL	solvency (current)			
-YEL contributions should not be tied to earned income of an entrepreneur	entrepreneur's autonomy (increase)	entrepreneur's autonomy		
-Pension institutions should more closely monitor YEL-income declarations of entrepreneurs	entrepreneur's autonomy (reduce)			
-Entrepreneurs' freedom to choose level and type of their social security should be increased	entrepreneur's autonomy (increase)			
-I am willing to pay more YEL to get better social security	openness to regulation	openness to regulation		Freedom <-> Security
-The minimum YEL contribution level should be raised to improve the social security of entrepreneurs	openness to regulation			
-The YEL reform reduces my desire to practice entrepreneurship	openness to regulation (lack thereof)			