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Non-Compliance With Temporary Agency Work Regulations: Initial Evidence From Germany

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Abstract

Temporary agency work and outsourcing to a service contractor are two forms of alternative work arrangements with rather complex legal aspects which firms use for external staffing. The regulatory complexity of temporary agency work can lead to intended or unintended non-compliance when firms outsource to a service contractor. In this paper, I provide first evidence for non-compliance with temporary agency work regulations when firms contract out on the basis of a unique new firm survey. By exploiting a choice experiment, I demonstrate that firms do understand the regulatory baseline of temporary agency work, although detailed knowledge often seems to be missing. Non-compliance with regulations therefore often results from ignorance of the legal grayzone.

Keywords temporary agency work, contracting out, compliance, choice experiment

JEL: K31, J41, J83, M55

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1 Introduction

Recent developments indicate that the traditional model of employee-employer relationships is on the decline. Alternative work arrangements such as temporary agency work, contract work and independent contractors have increased by five percentage points since 2005 and accounted for possibly 15.8% of the US workforce in 2015 (Katz and Krueger, 2019). Many explanations are put forward for the rise of those new forms of work: Pronounced use of ICT (Abramovsky and Griffith, 2006), weak labor markets with high unemployment and therefore little opportunity for standard employment relationships (Katz and Krueger, 2017), firms seeking to reduce rent sharing with their employees (Goldschmidt and Schmieder, 2017) and the desire to reduce regulatory burden (Weil, 2014). Firms therefore increasingly draw towards more flexible forms of work such as temporary agency work or contract work and reduce their own workforce.

The firm can decide between different forms of work arrangements: Employment, Temporary Agency Work, and Outsourcing to a service contractor¹. All forms have their advantages and drawbacks. Employing a worker is subject to standard employment protection and, depending on the firm or industry, wage regulation such as collective agreements and minimum wages. Yet, the firm can exert full managerial authority over the employee. The latter is true also for the temporary agency worker, but temp work is subject to certain employment regulations to avoid precarious working conditions. Payment is subject to temporary agency work specific minimum wage for the first six months. After that period, however, the temp worker is entitled to equal pay with respect to the core workforce. This is not the case when outsourcing to a service contractor. The contract worker receives wages set by the contractor firm and are not subject to a time limit. Yet, the firm has to give up any influence and control over the worker, as she is employee of another firm. Given that a firm already decided against employing a worker on its own, the choice between temporary agency work and outsourcing to a contractor is a trade-off: exerting managerial power over the worker or cost savings by exploiting potential wage differentials for a flexible duration.

I argue that there exist incentives for firms to reap the benefits of both forms of alternative work arrangements. This however, may result in non-compliance with temporary agency work regulations, especially if the contractor sends workers on the firm's premises. If the firm integrates those workers in its organizational structure - as it is typical for temp workers - contract work

¹I will use the terms outsourcing, contracting out and contract work interchangeably throughout this paper as they all refer to work conducted by a third party.

as the official contracting form is not appropriate and the situation constitutes non-compliance with temporary agency work regulations. For a profit-maximizing firm, compliance is never an optimal choice in the absence of enforcement. Even if regulations are enforced, firms will still choose not to comply if the probability of being caught and the penalty to be paid are small compared to the loss of profit deriving from compliant behavior (Ashenfelter and Smith, 1979). Temporary agency work and contract work are valid and legal forms of alternative work arrangements if properly realized. However, given the vast body of regulations for temporary agency work, differentiation between the two is often blurred and implementation of contract work - be it intended or unintended - happens within a legal gray zone or is illegal. Firms' non-compliant behavior implies that workers are misclassified and may experience wage losses. While temp workers are entitled to payment of equal wages with respect to the core workforce, contract workers are withheld from firm's rent sharing.

While the literature is vast on temporary agency work, we lack reliable research on the effects of contract work. Both alternative work arrangements are associated with wage penalties for workers (see Boenheim and Cardoso (2009); Forde and Slater (2005) for temporary agency work and Dube and Kaplan (2010); Goldschmidt and Schmieder (2017) for contract work). Furthermore, temporary agency workers are less likely to receive a permanent contract (Amuedo-Dorantes et al., 2008) or find themselves in repeated spells of temp work (Antoni and Jahn, 2009) as compared to standard employment. Nevertheless, future employment spells of temp workers are found to be stable (de Graaf-Zijl et al., 2011; Ichino et al., 2008). However, empirical research is based on registered temporary agency work, and it is unclear if the effects hold for unregistered temporary agency work, too. In addition, legislators' intentions to protect vulnerable temporary agency workers miss the target if the group is not fully captured.

This paper aims at investigating non-compliance with Temporary Agency Work regulations when firms use service contractors as alternative work arrangements. I make three main contributions.

First, I address the issue of whether firms are able to differentiate the two forms of external staffing in principle. Given that temporary agency work is highly regulated, agents might not be fully aware of the legal details. In order to understand whether firms have the knowledge of legal aspects, I use a choice experiment. Respondents are confronted with hypothetical staffing situations and are asked to choose the appropriate legal contract. In this experimental part of the paper I find that firms show a basic knowledge of the differentiation between temporary

agency work and contract work. However, on average they do not exhibit a detailed legal literacy and have a bias towards choosing the unregulated contract work.

Second, I provide indicative evidence for non-compliance with Temporary Agency Work Regulations in Germany. I do so by investigating whether the way how alternative work arrangements are implemented in firms show features of temporary agency work but are labeled to be contract work. I make use of a novel data set on contract work and its implementation in German firms. I find that there are firms which officially outsource to service contractors but implement it like temporary agency work and hence represent a group of non-compliers. Given that there is indication of non-compliance, defacto temporary agency work is probably under-reported in official statistics. Furthermore, investigators sent out to temp agencies are probably able to find some partial non-compliance with temporary agency work regulations, but would not find the fully non-complying firms.

After having established the level of legal knowledge and the compliance situation, thirdly, I address the question whether non-compliance is an informed choice and therefore might be considered as fraud or if non-compliance is simply deriving from ignorance. By linking the experimental part of the paper with the defacto implementation practices, I investigate whether firms comply with the regulations, given that they are able to understand them. I find that complying firms reveal an average basic legal knowledge. They are not fully able to discriminate between the two forms of work arrangements and their compliant behavior is not based on substantial knowledge. In addition, I find that non-complying firms show lower legal literacy in differentiating contract work and temporary agency work. Hence, their non-compliant behavior is not an informed choice but rather derives from a lack of detailed knowledge.

The limited legal literacy of most of the firms indicates that temporary agency work regulations are too complex and the legal proximity of contract work is not fully understood. Many firms outsourcing to a service contractor are not aware of the problematic legal grayzone with respect to temporary agency work. Policy makers could therefore expand efforts in educational work by providing reliable information on the distinction of the two staffing arrangements, if the aim is to reduce non-compliance with temporary agency work regulations.

The paper is structured as follows. In Section 2, I review the economic literature on compliance and describe the two forms of work arrangements and their legal relation which constitutes the baseline for compliance and non-compliance. In Section 3, I describe the data and provide descriptive statistics on the compliance situation in Germany. I shortly present the empirical

strategy before turning to the results in Section 4. Section 5 concludes.

2 Compliance and Institutional Background

2.1 Compliance in Economics

There exists an extensive body of literature on non-compliance with labor market regulations in general, which is especially prominent in developing countries. In those countries non-compliance is represented by large informal labor markets such that firms or workers conduct economic activity which is not reported to regulatory or tax authorities. This includes social security contributions (Almeida and Carneiro, 2012) but also compliance with minimum wage laws. In contrast to many other labor market institutions, enforcement of minimum wages is not only a problem in developing countries (Rani et al., 2013; Squire and Suthiwart-Narueput, 1997) but also in industrialized economies. For the first US - minimum wages in the 1970s compliance is calculated to be around 70% (Ashenfelter and Smith, 1979). Non-compliance continues to serve as answer to statistic puzzles in current minimum wage evaluation (Caliendo et al., 2018).

Based on the economics-of-crime model by Becker (1968) especially the field of public finance has developed models to explain individuals' choices of non-compliance (see Alm (2019) for a current review). Ashenfelter and Smith (1979) model compliance with labor market regulations as a firm decision depending on wages. For a profit-maximizing employer compliance with a minimum wage law is never an optimal choice in the absence of enforcement. Even in the case of enforcement, employers will still choose not to comply if the probability of being caught and the amount of the penalty to be paid are small relative to the forgone profit of compliance. Their economic theory of firms' non-compliance focuses on minimum wage law, but can be applied to any regulatory setting where the known costs of compliance are higher than the probable costs of non-compliance.

Early models are based on expected utility theory and therefore define compliance as rational choice or a willingness to comply. Yet, individuals are not always rational and deviate from classical economic decision models: They have a limited computing ability (bounded rationality), they asymmetrically assess their perspectives depending on a reference point (prospect theory), and they are subject to various other cognitive biases. Behavioral economics discusses how those biases affect decision making and therefore the ability to comply with regulations (Congdon et al., 2011). Decisions are formed within a set of social norms, such that an individual's choice

is affected by how others behave (Cialdini et al., 1990; Goldstein et al., 2008). Agents prefer choices which are simple and convenient in addition to being likely to adopt default options (Lunn, 2014). This is in contrast to what regulatory designers often do. Many labor market regulations are very detailed in trying to cover as many situations as possible. Thereby, they are hard to comprehend for agents in the market on the one hand. Smart agents on the other hand, are able to find shortcomings in the law and alternatives circumventing the regulation. Empirically, higher compliance is not only observed in countries with credible enforcement, but also where policies are comprehensible and aim at raising awareness (Rani et al., 2013).

Non-compliance with governmental regulations is important for many reasons. Speaking in broad terms, it induces a re-allocation of public or private resources and creates unintended distortions or welfare losses (Congdon et al., 2011). Non-compliance with temporary agency work regulations distorts firm competition and increases firm polarization. Firstly, agencies who compliantly provide temporary workers compete not only with other agencies but in addition with unregulated contractors. Secondly, service contractors conducting non-compliant activities may have a cost advantage over their compliant competitors thereby gaining higher profits or market shares. This in turn may affect wages and increase wage polarization between core workforce and the external workers.

Empirical analysis of non-compliance is challenging:

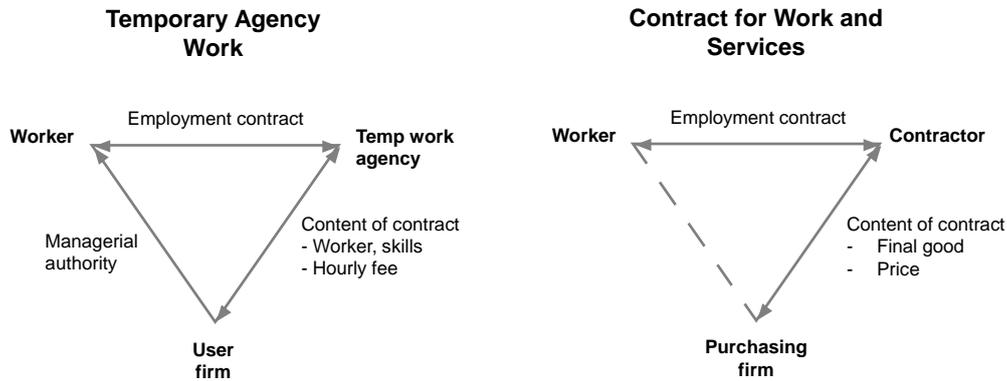
“As with most analyses of undetected illegal behavior, noncompliance can rarely be established without ambiguity.” (Ashenfelter and Smith, 1979, p.334)

Compliance or noncompliance are per se ambiguous concepts. Laws can be respected to varying degrees, ranging from full, over partial to no compliance at all. In addition, illegal behavior is mostly not reported in official statistics and data is therefore scarce.

2.2 Definitions

Temporary Agency Work (TAW, “*Arbeitnehmerüberlassung*”) is a flexible staffing instrument which allows firms to adopt their labor input to business cycles and demand fluctuations. Figure 1 displays the interaction of the parties engaged in TAW on the left hand side. The temp worker is employed by the temporary work agency and then hired out to perform his or her work at and under the supervision of the user firm. A temporary work agency fulfills the contractual obligations by providing adequate staff without any further responsibility. The client firm then

Figure 1: Temporary Agency Work and Contracts for Work and Services - Legal Distinction



Notes: Own illustration based on Hamann (2003), p20.

has full managerial authority over the temp worker and is free to include him in its production process similar to own employees. TAW provides labor input to the production of the client firm.

Temporary Agency Work has grown in most OECD countries (OECD, 2019). In 2016 there were more than 990,000 temporary agency workers in Germany, representing 2.7% of total employment (Bundesagentur für Arbeit, 2018).

Due to the often precarious working conditions TAW is regulated in the European Union since 2011 (European Parliament, 2008)². In order to rent out workers, temporary work agencies need a license issued by the Federal Employment Agency. The duration of a worker's assignment is limited to a maximum number of months. In 2016 the maximum duration was 18 months. According to firms, the limitation of assignment duration is the largest drawback of TAW regulations (Hamann, 2003). Furthermore, since 2013 temporary agency workers are subject to a sector specific minimum wage. This wage level is higher than the statutory minimum wage that was introduced in 2015, yet below other collective agreements. Additionally, after 6 months of assignment workers have the right to equal pay with respect to the core workforce. These regulations reduce the attractiveness of TAW especially when flexibility and wage savings are the reason for its use.

Contracts for Work and Services (CWS, "*Werkverträge*") are the contractual basis for German firms when undertaking outsourcing activities. Those contracts define the purchase of a

²Germany adopted the directive earlier and the TAW sector was highly regulated by labor law already before the Directive 2008/104/EC became effective officially.

work or service by a buyer from a seller for an agreed price and are subject to contract law.³ The right hand side of Figure 1 displays the schematics of contracts for work and services. While the contracting parties are relatively free to choose the details of their agreement, there are two integral parts of a contract for work and service. One is the timing and definition of the material result or service which is to be provided by the contractor. The other one is the agreed price that has to be paid by the customer in exchange. Any further agreements to be included are additional and not obligatory. The “work or service” subject to the contract is characterized by a final result and not by the effort needed to provide it. The worker itself is therefore not part of the contract. The purchasing firm can specify detailed characteristics of the final good but has no right to interfere with either the realization process in general or the selection of personnel in specific. It is the contractor’s full responsibility to realize the agreed output while bearing the full entrepreneurial risk in doing so. Contract work is therefore an intermediate input, partially substituting for own production of the purchasing firm.

Contracts for work and services between firms are a vital part of advanced economies, showing up in intermediate consumption in national accounting.⁴ Due to growing international trade driven by globalization and increasing importance of digital technologies, contracting out has become increasingly important (Abramovsky and Griffith, 2006). Contracting out serves as explanation for various labor market developments. It can explain wage polarization by increasing dispersion in wage premia across firms and assortative matching (Card et al., 2013) as well as task specialization by firms as they increasingly outsource cognitive tasks (Cortes and Salvatori, 2019). In an economic downturn, Germany’s manufacturing sector profited from outsourcing services to other domestic sectors with low wage growth (Dustmann et al., 2014).

Most activities or tasks can be realized by using either of the external work arrangements. Filling of shelves should serve as an example here. In both cases the shelving worker has an employment contract⁵ with her employer, a temporary work agency or a service contractor. If the employer is a temporary work agency it concludes a hiring contract with the user firm, specifying that a named worker with shelving skills is rented out to the user firm. The user firm then assumes full managerial authority and has to instruct the worker on which shelves to fill, how to

³In contrast to the similar contract for sale the contracted work or service is very specific to the buyer and can hardly be resold to another party.

⁴In 2018 intermediate consumption amounted to 51 % of gross output in Germany (Volkswirtschaftliche Gesamtrechnung, destatis).

⁵This employment contract can be open-ended, part-time, fixed-term or any other form of full or marginal employment.

stack products and coordinates working times, absences and job site. In the case of contract work, the contracting partner is probably a logistics firm or a firm offering services for retailers. The contract specifies the result, hence that the contractor is obliged to have shelves filled by a certain date or time of the day. It is the contractor's decision how this result is achieved. It is at his choice to send one worker to each store or a group of workers covering more than one store. Instructing the workers and planning of their working hours is core task of the contractor.

2.3 Compliance with Temporary Agency Work Regulations

Contracts for work and services and temporary agency work are two different methods of deploying external staff. Their distinction is obvious when the final good is delivered to the client firm without further interaction. However, a contract for work and services can define a work that needs to be conducted on the premises of client firm. In this case, the contractor sends workers to produce the good or provide the service on-site. If the client firm integrates those workers in its organizational structure or interferes in another way with the realization of the output it may constitute a situation of non-compliance with temporary agency work regulations.

The current legal situation causes some uncertainty for firms, as there do not exist clear criteria or a cutoff point to distinguish temporary agency work from contracts for work and services. Starting point in determining compliance or non-compliance is the definition of temporary agency work with its regulations (Deich, 2009). Not the naming of the contractual agreement is relevant, but only the defacto way of implementation. Based on the TAW regulations, legal scholars have identified various implementation features that allow for a distinction of TAW and CWS (Deich, 2009; Hamann, 2003, 2017). I will group them to primary and secondary aspects, taking into account that some features are considered more relevant than others in defining the defacto implementation (Greiner, 2013).

The **Primary Aspects** to distinguish TAW from CWS refer to the entrepreneurial risk and managerial authority. In the case of a contract for work and services the entrepreneurial risk lies with the contractor. As the labor or capital inputs needed to produce the work or service are not explicitly part of the contract, the contractor has full authority on how the work is done. This implies that any risk associated with providing the service has to be borne by the contractor, too. First, I consider as primary aspect who is giving the instructions to the workers, whether it is the contractor or a supervisor thereof, or employees of the purchasing firm. Second, in the case of contract work the final good is checked and accepted while with a TAW the firm has to actively

control the work process. Finally, the most conclusive primary aspect is the fact who pays for rework in case the final good is defect. With a contract for work and services the contractor has to remedy or newly produce the contracted good. With TAW the responsibility lies only with user firm which hence has to cover any further costs. The primary aspects are not directly visible for a casual observer at any point in time.

The **Secondary Aspects** in distinguishing TAW from CWS are permanently observable characteristics. Judges and lawyers adduce them as evidence if the primary aspects do not allow for a clear distinction. These aspects refer to the extent of external workers' integration into the firm's organizational structure. Contract workers are not to be integrated into the company organization of the client firm, while the labor supplied by temp workers is by definition a direct input to the production function. Hence, workers bringing their own tools, having a different working space or performing different tasks than the core workforce of the client firm are features I consider as secondary aspects of CWS.

Each of the individual aspects is considered an indicator for the distinction of temporary agency work from contract work. They are used to describe the accuracy in implementing both forms. However, there is no legally defined threshold for what is considered to be on the legal side and what constitutes noncompliance. Judges individually assess each potential non-compliant situation by taking into account all implementation features. This lack of legal clarity spans a grayzone between TAW and CWS and renders differentiation difficult in practice. The federal employment agency provides little help for firms. Their leaflet which should provide information and help firms to understand the differences is not helpful. Its concluding remark on engaging the services of legal advisers or lawyers to obtain precise information was criticized as insufficient by legal scholars (Hamann 2017, p. 41).

Only few cases of noncompliance with TAW regulations are taken to the courts, even less are convicted. Inspections by the financial control of illicit employment (Finanzkontrolle Schwarzarbeit) only take place if there are indications for non-compliance (denouncing). In 2010, 868 cases were fined with an average fine of 100 Euro and only 64 cases were convicted as a crime (Bundesregierung, 2011). Enforcement is therefore low. Given that temporary agency work is regulated and subject to a higher minimum wage, and misuse has rarely legal consequences, there exist incentives to conclude a contract for work and services instead.

I argue that agreements declared as contract for work and services are the relevant form to investigate. If the two parties conclude a contract for work and services but the defacto

implementation shows features of TAW this is considered illegal. This form of noncompliance is known as illegal supply of temporary agency workers or pseudo contract work (Scheinwerkvertrag). If, on the other hand, two firms use the highly regulated temporary agency work as the official declaration for their staffing agreement, they are most probably aware of the underlying regulations. Hence, investigating TAW would only reveal small acts of non-compliance. This is similar to the situation in countries with informal labor markets as described by Almeida and Carneiro (2012): Formal firms are easier to find and hence easier to control by labor inspectors. By doing so, the main source of informal employment - informal firms - is ignored. In order to find the main source of non-compliance with TAW regulations, I will therefore focus on contracts for work and services.

3 Data and Descriptive Statistics

For the analysis I use two cohesive surveys conducted among German firms in 2016.

The first survey (survey #1) is the COOP - Contracting Out Operational Processes, a questionnaire investigating the prevalence and intensity of contracts for work and services. The computer-assisted telephone interviews with managers, personnel managers or heads of purchasing departments were conducted in 8.457 German firms with at least one dependent employee.⁶ Participants were chosen by stratified random sampling, such that firms are representative with respect to firm size and industry. I apply the provided weights for analyses related to the prevalence of contracts for work and services and non-compliance.

The questionnaire addresses issues of outsourcing to other firms,⁷ especially the use of contracts for work and services. In addition to unveiling the prevalence of contracting out, the data allows to investigate the reasons, organizational procedures and working conditions associated with contracts for work and services. The survey includes questions on the reasons why CWS are used and also why CWS rather than TAW is implemented. If firms use contracts for work and services they are interviewed in detail on the features and legal aspects of the contract's implementation. Using this information I present descriptive evidence for non-compliance⁸ with

⁶More information on the data, such as questionnaire and sampling design, weights and a discussion of representativeness and response behavior can be found in Arntz et al. (2017).

⁷Outsourcing to solo self-employed workers like freelancers is not integral part of the questionnaire and captured only if a firm reports to have no B2B cooperation.

⁸Due to the lack of a legally defined threshold, the data used in this paper does not allow for establishing proper juridical non-compliance. For a verdict, judges take an overall assessment which is subject to a more extensive investigation than a survey can achieve. However, the survey gathers the same basic information as it would be done for a juridical review.

Table 1: Prevalence of contracts for work and services and reasons for outsourcing

	Percentage of firms
<u>Use of Outsourcing</u>	
Neither user firm, nor contractor	7.3
User firm, but not contractor	39.7
No user firm, only contractor	1.5
Both user firm and contractor	51.4
<u>Outsourcing because of... (multiple answers possible)</u>	
Wage savings	36.1
Specialized staff	75.9
Better alternative to temporary agency work	27.7
Flexible labor input	40.3

Relative frequencies of indicating outsourcing and reasons for its use. Sampling weights applied. First panel N=8,457; second panel N=3,734

TAW regulations when firms use CWS in section 3.1.

The data captures contracting out in its various forms, be it either work which has been done previously in-house or new or temporary activities which have never been performed by the firm itself but always or once by contractors. In addition to representing the user side (by outsourcing business functions), firms can also be suppliers and perform the contracted tasks. In some cases both features apply, since each firm can potentially be both a user firm by employing external staff for its own processes and a contractor providing other firms with special works or services. Table 1 shows how the possible constellations are distributed in the German economy. It is particularly noticeable that there are only few firms (7 percent) that do not engage in outsourcing activities and hence are neither user nor contractor of contracts for work and services. In addition, 91 percent of all firms are users of contracts for work and services and half of the firms indicate that they act as contractors as well. The use of contracts for work and services is therefore a common form of external staffing in Germany. The main reason for its use is the need for specialized staff. Flexibility and wage savings are less important but still are indicated by more than a third of the firms. 28 percent of the outsourcing firms also state that contract work is a better alternative to temporary agency work.

On the other hand, the provision of contracts for work and services is concentrated on considerably fewer firms than the user side. Based on the data, I approximate that possibly 16.3m employees work in firms that operate as contractors, 9.2m are in some way performing contract work and 5.7m employees are only performing contract work⁹. This implies that possibly

⁹This is a back-of-the-envelope calculation, using the information of firms reporting the share of their revenues

13 percent of employees in Germany are dedicated to provide services and goods to other firms via contract work.

The second data in my analysis is a choice experiment (survey #2). The participants for this vignette study are recruited from the COOP (survey #1) by asking for their willingness to participate in an additional personal computer assisted interview (CAPI). A face to face interview allows for more complicated questions and thus contains the choice experiment I describe in Section 3.2. The aim of the experimental survey is to understand the extent of respondent's knowledge on the legal differentiation between TAW and CWS. Firms taking part in survey #2 are not representative by sampling design, but show similar characteristics with respect to using contracts for work and services as I discuss later.

Besides the problematic nature of the topic, the data has limitations which are due to the survey design. Our respondent can be a different individual than the person deciding about the use of TAW or CWS. Furthermore, the respondents might not be the same individuals in survey #1 and #2.¹⁰ However, the interviews were conducted with managing directors or other executive staff who can therefore be assumed to be involved in or near to the decision process. In addition, they are both managerial employees of the same firm. It is therefore plausible to assume they have the possibility to share their legal knowledge with the rest of the firm.

3.1 Defacto implementation

In order to understand the features of the organizational structure and the way how contracts for work and services are implemented in the firm, the COOP includes a variety of related questions. Some of those questions are strong in identifying compliance or non-compliance as they refer to legal primary aspects, others do only give small indications given that they are referring to aspects of secondary legal relevance. As these questions are only relevant in the case of onsite outsourcing, information on defacto implementation is available for a respective subset of 2,832 firms.

Panel A of Table 2 lists the questions related to both primary and secondary aspects and whether a Yes or No is the answer associated with compliant behavior. 69% of all firms state

by providing contract work to other firms, the share of their employees dedicated to do this contract work, and the number of employees in the firm.

¹⁰The two interviews were conducted over the course of six months. The implementation situation (survey #1) might not concur with the legal knowledge (survey #2). I will use a question from survey #2 addressing this issue. Respondents were asked whether they are aware of the legal grayzones when using CWS and TAW. Firms reporting a general awareness of the topic do not show a different legal knowledge than firms without.

that their employees are not guiding and instructing external workers and are therefore showing compliant behavior for the aspect referring to instructions. About 68% of firms do not control the workflow of the external workers but instead check only the final product and 56% have the contractor pay for reworks and remedy. Hence, the majority of firms report individual details of their external staffing such that they suggest compliance with TAW regulations.

For all individual aspects more than half of the firms report their implementation behavior to be compliant with TAW regulations. However, this implies that the remaining firms are showing indications for non-compliance. This is especially pronounced when it comes to the question of who pays for rework or remedy. Legal scholars consider this aspect to be the most conclusive in determining non-compliance. If CWS are properly implemented, it is the contractor's obligation to cover any costs for rework. The 44% of firms reporting to pay for rework are therefore clearly not complying with TAW regulations. Panel B of Table 2 sums up the individual aspects to provide a more comprehensive compliance picture. 29% of firms report compliant behavior for all three primary aspects. The contracts for work and services of 7% of the firms show features which are clearly not compliant with TAW regulations by violating all three primary aspects. As 5.7m employees are dedicated to conduct contract work, probably around 400.000 of them are misclassified in official statistics and should be considered as temporary agency workers.

For the analyses in the paper, I will mostly use indicators related to the implementation of the primary legal aspects, due to their higher relevance in determining non-compliant behavior.

To better understand which firms are compliers or non-compliers, Table 7 in the Appendix provides descriptive statistics by the compliance status of firms. Compliers are smaller firms, who use temporary agency work less often and also do not as much consider contract work to be a better alternative. For compliers, wage savings are less often the reason for outsourcing. A significantly larger share of non-compliers outsource for reasons of wage savings and flexible labor input. Non-compliers also consider contract work a better alternative to temporary agency work. This is in line with the rationale that firms have incentives to reap the advantages of both forms of alternative work arrangements, which however may result in non-compliant behavior.

Answering questions related to features of non-compliance may be subject to social desirability bias. Firms may be reluctant to report illegal behavior and hence the reported non-compliance has to be considered a lower bound information. However, given the observed extent to which firms report indications for non-compliance, social desirability bias seems to be small. This may be due to different reasons. First, firms may not be aware that their behavior possibly violates

Table 2: Defacto implementation features of CWS indicating compliance with TAW regulations

	compliant if answered with	share of firms
Panel A: Defacto implementation of individual aspects		
Primary Aspects		
Instructions: Are external workers regularly instructed by own employees?	No	0.6915
Check: Do you control and interfere with the workflow of external workers?	No	0.6847
Rework: Do you pay in case of rework?	No	0.5609
Secondary Aspects		
Workspace: Do external workers have a separate work space?	Yes	0.5007
Tools: Do external workers bring their own tools?	Yes	0.5548
Tasks: Do external workers conduct the same tasks as your core workforce?	No	0.7651
Panel B: Aggregating the non-compliant implementation practices		
Non-compliers primary aspects		0.0664
Full compliers primary aspects		0.2892
Full compliers all aspects		0.0883

Notes: Firms are asked about the implementation practices of their CWS. Column 2 indicates the answer which is in line with CWS implementation and therefore compliant with TAW regulations. Column 3 lists the share of firms reporting the respective compliant implementation behavior. In Panel B, full compliers' implementation behavior respects primary/all aspects, non-compliers' implementation behavior violates TAW regulations in primary/all aspects. N=2,832 for primary aspects in Panel A and B. N=691 for secondary aspects in Panel A and all aspects in Panel B.

TAW regulations and their non-compliance is deriving from ignorance. Second, firms might be aware of the legal setting but do not mind breaking TAW regulations given that sanctions are small and unlikely. If the latter is the case, firms' non-compliance has to be considered as fraudulent behavior. I therefore need to assess the legal literacy of firms and understand whether firms can differentiate between contracts for work and services and temporary agency work in principle.

3.2 Assessment of knowledge by a choice experiment

In order to investigate the extent of firms' knowledge about the two forms of external staffing, I make use of a choice experiment in the survey. In such experiments respondents are asked to choose from or rate multiple hypothetical descriptions (vignettes) that vary along different dimensions. The dimensions included in the vignette are presumed to be relevant determinants of the overall situation. One of the first applications of vignette studies was by Rossi et al. (1974) in order to investigate how various characteristics of household members add to the social standing of their common household. The seminal paper was followed by applications in various social sciences, especially sociology, covering fields like crime, law, sex and gender (see Wallander (2009) for a systematic review of factorial surveys in sociology). In economics, choice experiments are

increasingly applied to answer questions of racial discrimination in the labor market (Bertrand and Mullainathan, 2004), naturalization (Hainmueller and Hangartner, 2013) and attitudes towards migration (Hainmueller and Hopkins, 2015).

In the study at hand, a vignette is a hypothetical but specific implementation situation describing external staffing to which the respondent has to assign the label “temporary agency work” or “contract for work and services”. Each vignette is composed of six dimensions which represent the primary and secondary aspects relevant for the legal distinction of TAW and CWS as discussed in Section 2.3. Each dimension describes either the feature of temporary agency work or contract for work and services. Hence, the respondent is asked to evaluate fictitious settings where the overall situations vary from clear cut temporary agency work to clear cut contract work, and the grayzone in-between.

Table 8 in the Appendix lists all dimensions with their respective attributes and indicates whether they represent a situation legally associated with a contract for work and services or temporary agency work.

The vignettes used in the survey are constructed by combining the six dimensions, randomly choosing one level of each dimension. Beyond the varying vignette dimensions, one characteristic is held constant. The respondents are informed that the work or service is performed on their premises¹¹. This situation is the necessary condition which allows the client firm to exert any form of managerial authority over the external workers. It initiates the legal distinction between temporary agency work and contract work.

¹¹This includes also situations in which the user firm specifies any job site other than the contracting firm’s.

An exemplary vignette including the introductory comments reads as follows:

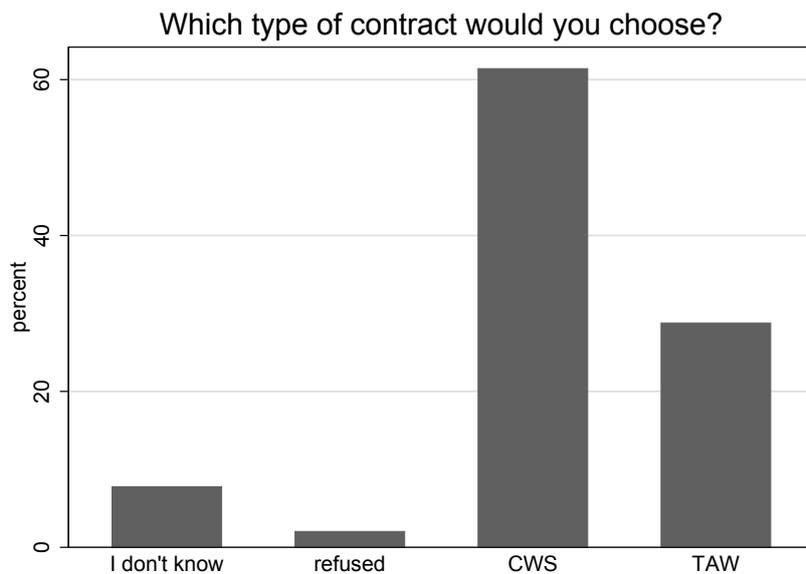
Imagine a situation where you want a task to be performed by a third party firm. The contracting partner is another firm with employees. I will present you different variants of the general implementation and how the tasks are realized. For each variant, please evaluate whether you would choose a contract for work and services or a temporary agency work agreement as contracting form. In a next step please indicate, whether the scenario at hand is prevalent in your firm.

The work or service is performed on your firm's premises or a job site determined by your firm. The external workers conduct different tasks than your core workforce. The external workers work in a separate work space and bring and use their own tools. The external workers are instructed by an external supervisor. Your firm checks and accepts the final product. In case of a defect work, the external firm pays it to be remedied or newly produced.

Each respondent has to evaluate 5 randomly selected situations out of 64 possible combinations and indicate which type of contract they would choose for the specific situation - a contract for work and services (CWS) or temporary agency work (TAW).

Figure 2 shows the resulting choices for all 3,200 vignettes. 61 percent of the vignettes were answered such that respondents would choose a contract for work and services, compared to 29 percent temporary agency work as contracting form. In 8 percent of the vignettes, respondents do not know which contracting form to choose and in 2 percent respondents refused to answer.

Figure 2: Dependent variable - Chosen contracting form in the choice experiment



Notes: Relative Frequency of answers to the question "Please evaluate whether you would choose a contract for work and services or a temporary agency work agreement as contracting form.", N=3200.

Respondents are twice as likely to choose CWS than TAW for any given hypothetical situation. This may be due to various reasons, which I can not investigate but only speculate. First, CWS is the seemingly unregulated form of external staffing and may be therefore preferred over TAW, also in cases where the aspects are not clear. Second, TAW can only be arranged with a limited number of licensed firms while CWS can be concluded with any firm and, as shown before, is therefore more common. Third, the survey that escorted the vignette study is focussed on CWS and hence participants might have been more inclined to choose this contracting form. However, none of the above discussed reasons is a threat to identification as I will use the variation over a set of vignettes for each respondent, regardless of the respondent's baseline bias for one of the two contracting forms.

It is however important that the attributes are orthogonal over all dimensions. Orthogonality is ensured by including all possible combinations in the survey and randomizing the vignettes. Table 9 in the Appendix shows the sample statistics at the vignette level. The first six rows show how often each dimension's attribute took the description of a setting in line with CWS characteristics. For all six dimensions this value is around 50%, indicating that the randomization is conducted properly. This is also true for the linked sample, where the experimental data is combined with defacto implementation practices. Furthermore, for about 10 percent of all vignettes, the three primary aspects congruently represent CWS or respectively TAW. For 40 percent of the vignettes the respondents indicate that this hypothetical situation is also prevalent at the firm.

By randomizing each dimension's content (attributes) independently, the vignette universe has the feature of factor orthogonality. This allows to estimate the relative importance of each attribute for the resulting choice and results in high internal validity by experimental design. As the respondents are unlikely to be fully aware of the controlled variation, their answers are supposed to be less affected by social desirability bias than in conventional surveys (Alexander and Becker, 1978). In addition to internal validity, Hainmueller et al. (2015) show a relatively high external validity of vignette analyses if targeted at the appropriate sample.

Table 3 shows the sample statistics for the full set of firms in the COOP, for the firms participating in the vignette survey (survey #2 used in Section 4.1) and for the linked sample used for the defacto-comparison in Section 4.2. The samples are relatively similar in their characteristics with regards to being a client firm (more than 90%) and contractor (around 55%) of contracts for work and services. About one third of the firms indicate to be aware of legal grey

Table 3: Sample Statistics - Firm level

	Full Sample	Vignette Sample	Linked Sample
Firm characteristics	N=8,457	N=593	N=222
Share of firms using CWS for external staffing	0.9297	0.9293	1***
Share of firms being contractor	0.5732	0.5552	0.5270*
Share of firms using TAW for external staffing	0.1201	0.1366	0.0807**
Share of firms being aware of legal grayzones	N/A	0.3502	0.3767
Share of firms inclined to use CWS in unclear situation	N/A	0.3491	0.3649
Average number of employees	85.68	144.27*	49.80***
Compliance characteristics	N=2,832	N=234	N=222
Instructions: compliant behavior	0.6915	0.6910	0.6847
Check: compliant behavior	0.6847	0.6496	0.6441*
Rework: compliant behavior	0.5609	0.6395**	0.6351***
Share of firms being full complier (primary)	0.2892	0.3291*	0.3243
Share of firms being non-complier (primary)	0.0664	0.0556	0.0586

Notes: Firm characteristics are available for all firms, compliance characteristics for a subsample thereof. Sample sizes are indicated respectively. Significant differences from the full sample statistics are indicated by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. N/A indicates that variable is not available for this sample.

areas of TAW regulations when dealing with CWS and also one third reports to be more inclined to use CWS rather than TAW agreements in any setting of external staffing. The vignette sample has a higher share of firms using also TAW and has a larger number of employees. The share of full compliers is slightly larger in the vignette sample than in the full survey sample. Hence, the firms in the vignette sample are similar to the overall sample with respect to the CWS characteristics, but are more likely to comply, use TAW as well and are larger. The average firm in the vignette sample might therefore be more aware of TAW regulations than an average firm overall.

4 What do firms know and do they abuse?

To analyze the legal literacy of firms based on the choice experiment, I will estimate

$$CWS_i = \alpha_d Dimension_{di} + \gamma_f + u_i$$

where CWS_i is a binary variable indicating that CWS was the choice for a given vignette i . $Dimension_{di}$ is the vector of the six dimensions consisting of binary variables which take the value of 1 if the respective dimension takes up the attribute of a contract for work and services,

($Dimension_{di}=1|attribute_{di}=CWS$). In order to find the marginal effect of each dimension regardless of individual baseline preference for CWS or TAW the estimation is run with a firm fixed effect γ_f . This estimation allows to identify the marginal effect that individual dimensions have on the choice for the appropriate contracting form. To analyze if firms' non-compliant behavior has to be considered as ignorant or rather fraudulent, some specifications will restrict the sample to various firm level information, such as the defacto implementation situation¹²

4.1 Basic but no detailed knowledge

Based on the features described in Section 2.3 of the legal distinction between temporary agency work and contracts for work and services, I derive some hypothesis on how the knowledge of respondents should be shaped.

Given the relative importance of primary to secondary aspects in determining the legal form, the primary dimensions should be especially important in determining the choice of the appropriate contracting form.

Only if the set of primary aspects is indecisive, the set of secondary aspects plays a role in the juridical assessment. Hence, if firms are informed, secondary aspects should only be a determining factor for the decision if the set of primary dimensions presents an unclear picture and does not help in determining the correct contracting form in the first place. However, the law is relatively complex and also the federal employment agency provides little help for firms. Hence, I furthermore expect that some firms do not know how to distinguish the two contracting forms.

Table 4 shows the results on the question whether firms have knowledge about the legal aspects in differentiating between TAW and CWS. The estimations in column 1 and 2 compare OLS and Fixed Effects estimators. Given that the estimations yield similar results, there seems to be no large respondent fixed effect of a baseline preference for one of the two contracting forms. Table 10 in the Appendix also includes a Probit estimation in order to account for the dichotomous dependent variable. Predicted marginal effects are similar to the fixed effects specification, which will be used throughout the paper.

In all specifications the vignette dimensions have a significant positive marginal effect on

¹²Note, that due to fixed effects any firm level information would have to be interacted with the variables of the hypothetical situation, resulting in long output tables which are hard to read. For simplicity I refrain from displaying interaction terms and instead provide the results of sample split estimates. The results for estimations with interaction term are similar in their interpretation to the presented sample split results.

Table 4: Results - Hypothetical Knowledge

Dep.Var: CWS chosen for hypothetical setting	(1) OLS	(2) FE	(3) firm uses TAW	(4) primary = CWS	(5) primary = TAW
instructed by ext. supervisor	0.115*** (0.015)	0.116*** (0.015)	0.194*** (0.041)		
final product is checked	0.049*** (0.015)	0.051*** (0.015)	0.125*** (0.039)		
rework paid by ext. firm	0.108*** (0.016)	0.111*** (0.017)	0.155*** (0.046)		
separate work space	0.057*** (0.015)	0.060*** (0.016)	0.021 (0.042)	0.211*** (0.078)	0.161*** (0.06)
own tools	0.027** (0.013)	0.028** (0.014)	0.039 (0.033)	-0.075 (0.087)	-0.019 (0.066)
different tasks	0.044*** (0.015)	0.043*** (0.015)	0.076* (0.042)	-0.016 (0.082)	-0.003 (0.062)
Constant	0.428*** (0.025)	0.425*** (0.02)	0.269*** (0.048)	0.674*** (0.064)	0.436*** (0.053)
OLS/FE	OLS	FE	FE	FE	FE
R^2	0.0668	0.067	0.142	0.129	0.088
N	3013	3013	470	358	376

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, standard errors clustered at the firm level presented in parenthesis. OLS estimation includes controls at the firm level: multicooperation, collective bargaining, competition, workers council, tenure of respondent. Specifications (2)-(5) include firm fixed effects. Specification (3) restricts the sample to firms using TAW. Specifications (4) and (5) restrict the sample to vignettes where all three primary dimension unambiguously indicate a setting under TAW or CWS respectively.

explaining the choice for the appropriate contracting form. If the specific vignette description included the information that external workers have a separate work space, the responded was 6% more likely to choose CWS as the resulting contract. The magnitude of the point estimate varies with the dimensions. Especially two primary aspects which are highly relevant for a legal distinction show the largest coefficients. Vignettes which stated that the workers are instructed by an external supervisor increase the choice of CWS by 11.6%. Hypothetical situations where rework is paid by the external firm show an increase of 11.1% in the probability of CWS being chosen. All dimensions describing a situation in line with CWS have a significant positive effect on the choice of CWS as contracting form. The coefficients of the primary aspects together are significantly¹³ larger than those for the secondary aspects in sum. This indicates that firms have a baseline knowledge of the aspects and also their relative importance in differentiating TAW and CWS.

Firms that employ TAW might have a better knowledge of the regulations related to its usage. Column 3 restricts the sample to firms using TAW. They have larger point estimates for the primary aspects and secondary aspects are less significant. Firms which are using temporary agency work have therefore a higher legal literacy in differentiating it from contract work.

The random composition of vignettes creates heterogeneous situations which are distributed over the full scale of the legal grayzone. Hence, some of the vignettes do not allow for a proper distinction between TAW and CWS. Yet, a subset of vignettes clearly identifies either TAW or CWS. This is the case if all primary aspects take on the characteristics of one contracting form, i.e. all primary aspects indicate either CWS or TAW. Columns 4 and 5 restrict the sample to vignettes where the legal distinction of CWS and TAW is clear. In those specifications the coefficients of the secondary aspects are insignificant apart from the information that workers are using a separate workspace¹⁴. Given that the primary aspect unambiguously indicate one of the two contracting forms, none of the secondary aspects should have an effect on the choice. In the case of all primary aspects indicating TAW, the constant is expected to be lower than in the pooled estimations if respondents were able to differentiate the two forms. Hence, even in the case of unambiguous hypothetical situations, the respondents make their choices on a low level of legal knowledge, similar to the previous specifications. Therefore, they are partially aware of secondary aspects not being relevant in the case of unambiguous primary aspects, yet have a high

¹³Wald test for coefficients Instructions + Check + Rework = Workspace + Tools + Tasks: $\chi^2(1) = 16.09$; Prob > $\chi^2 = 0.0001$.

¹⁴The three primary aspects are not included due to multicollinearity.

baseline preference for CWS. Additional specifications do not change this assessment of a basic but limited knowledge of the legal aspects (Table 10 in the Appendix). Firms that report to be more inclined to use CWS rather than TAW in any staffing situation do not show a different response behavior. This is true also for firms stating that they are aware of the legal grayzone.

Over all specifications the constant keeps a relatively high level. Hence, the respondents still choose CWS with a chance of approximately 40% even if all dimensions point towards TAW rather than CWS. This is not unexpected considering that more than 60% of the vignettes led to the choice of CWS already in the descriptive statistics (see Figure 2). Summarizing the results, I can infer that agents have basic knowledge of the regulations. Yet, the regulatory details are too complex to be fully applicable. Firms using TAW as well show a slightly higher legal literacy. The unregulated contract work seems to be the default option for users of external staffing arrangements.

4.2 Negligently ignorant behavior

So far I have shown that firms have a basic knowledge of the legal aspects related to the differentiation of CWS and TAW. Now I analyze whether firms' non-compliant behavior from the descriptive part of the paper has to be considered as ignorant or rather fraudulent. To this end, I combine the hypothetical legal knowledge from the vignettes with information on how the respective firm defacto implements their contracts for work and services.

On the one hand, I can investigate firms whose defacto use is consistent with CWS and therefore fully compliant with TAW regulations. On the other hand I can also identify if firms' defacto use of CWS shows all features of TAW and therefore violates TAW regulations. I will furthermore include information on whether the hypothetical setting is known at the firm as they reported to implement such a form of external staffing. If the situation is known at the firm the choice of the respondent can be considered to be more informed.

As the information about defacto implementation is available only for the linked subset, sample size decreases. Table 5 shows the respective estimation results. Column 1 reruns the baseline specification from the previous section on the smaller sample. Comparing the results with those of the full sample (Table 4, (2)) reveals that the linked sample shows a higher legal literacy. The choice of CWS as contracting form is predominantly determined by the primary aspects, while the secondary aspects are less or not significant.

Table 5: Results - Fraud or ignorance

Dep.Var: CWS chosen for hypothetical setting	(1) base FE	(2) vignette sit. known	(3) Non-complier primary aspects	(4) Full complier primary aspects	(5) Non-complier all aspects	(6) Full complier all aspects
instructed by ext. supervisor	0.132*** (0.025)	0.049* (0.029)	-0.036 (0.055)	0.138*** (0.042)	0.028 (0.094)	0.282** (0.115)
final product is checked	0.063*** (0.024)	0.075** (0.033)	0.178 (0.115)	0.034 (0.045)	0.206 (0.12)	-0.022 (0.094)
rework paid by ext. firm	0.106*** (0.027)	0.001 (0.035)	0.02 (0.091)	0.095** (0.044)	-0.029 (0.106)	0.137 (0.113)
separate work space	0.056** (0.025)	0.037 (0.032)	-0.124 (0.076)	0.013 (0.038)	-0.236* (0.121)	-0.033 (0.072)
own tools	0.013 (0.021)	0.004 (0.024)	0.057 (0.063)	-0.028 (0.039)	0.075 (0.1)	0.034 (0.048)
different tasks	0.031 (0.024)	0.039 (0.037)	0.038 (0.054)	0.038 (0.043)	0.114 (0.09)	0.122 (0.08)
Constant	0.457*** (0.031)	0.693*** (0.041)	0.530*** (0.072)	0.544*** (0.061)	0.749*** (0.046)	0.567*** (0.105)
FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.073	0.033	0.15	0.072	0.228	0.272
N	1235	536	75	377	55	52

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, standard errors clustered at the firm level presented in parenthesis. All specifications include firm fixed effects. Specification (1) reruns Specification (2) from Table 4 on the smaller sample. Specifications (2)-(6) restrict the sample to firms: (2) reporting that the hypothetical situation is known at the firm; (3) noncomplying with all three primary aspects; (4) fully complying with all three primary aspects; (5) noncomplying with all six aspects (6) fully complying with all six aspects.

The next specification includes information on whether the hypothetical setting is known and implemented as such. In firms where the situation is known, we can expect the choice of the contracting form to be more informed. The coefficients are at best marginally significant. The pure existence of such an implementation at the firm level has therefore no effect on determining the correct form of contract.

Specification 3 to 6 exploit information on the defacto implementation of CWS at the firm. Firms' defacto use of CWS can be non-compliant or compliant with respect to the three primary aspects and all six aspects. Specification (3) analyses firms where all three primary aspects are implemented such that they are non-compliant with TAW regulations, showing interesting results. The coefficients are insignificant on all vignette dimensions, indicating that non-complying firms do not even show a baseline knowledge of the legal differentiation. Coefficients of some aspects are even negative, yet not distinguishable from zero, indicating a perverted impression of how contract work should be implemented. Fully complying firms on the other hand, are better able to discriminate temporary agency work from contract work. If vignettes indicated that instructions are given by an external supervisor and the other firm pays for rework, they are more likely to chose CWS as the correct contracting form (Specification 4). A similar picture can also be observed for compliance or non-compliance with respect to all six legal aspects (Specifications 5 and 6). However, even for complying firms the constant is at 0.544. Hence, they marginally react to the individual legal aspects but are choosing CWS as contracting form in 50 percent of cases which indicate that temporary agency work is the appropriate form. Compliers therefore show a similar baseline legal literacy as demonstrated before, while non-compliers cannot discriminate between the two forms of external staffing at all or might even confuse them.

Whether firms comply or non-comply knowingly can also be analyzed on the firm level. I therefore calculate an indicator for the share of "correct" choices in the survey experiment. An answer is considered correct if the choice in the experiment corresponds with the appropriate type of contract. As this is feasible only in cases where vignettes describe unambiguous situations¹⁵, approximately 20% of the vignette sample can be used. The correctness indicator reports the share of correct choices among unambiguous vignettes at the firm level and ranges from 0 to 1, where the upper end indicates that for all hypothetical legal unambiguous situations the appropriate contracting form was chosen.

¹⁵Vignettes are considered unambiguous if the set of the three primary aspects congruently indicates either CWS or TAW

Table 6 shows the correlation of different non-compliance indicators with the share of correct choices in the experiment. In column 1 and 2 non-compliant behavior in the primary and respectively secondary aspects at the firm level is counted. In column 3 all six aspects are taken into account. Column 4 and 5 use dummy variables indicating if a firm is a full complier or non-complier with the primary aspects. All correlations are negative but insignificant. The negative sign would indicate that firms with higher legal literacy - measured by correct choices - show less non-compliant behavior, implying that legal literacy comes along with compliance. However, based on a smaller subset of firms and vignettes, there is no significant indication for either fraudulent or negligent behavior.

Table 6: Results - Fraud or ignorance - Firm level

	(1)	(2)	(3)	(4)	(5)
	counting defacto non-compliant aspects			full	non-
Dep.var.:	primary	secondary	all	complier	complier
	[0-3]	[0-3]	[0-6]	primary	primary
Share of correct choices in experiment [0-1]	-0.068 (0.164)	-0.466 (0.413)	-0.968 (0.628)	-0.107 (0.088)	-0.060 (0.041)
Constant	1.986*** (0.219)	2.606*** (0.602)	4.790*** (0.916)	0.405*** (0.118)	0.099* (0.055)
All controls included	Yes	Yes	Yes	Yes	Yes
R^2	0.066	0.254	0.292	0.063	0.090
N (firms)	172	48	48	172	172

Notes: OLS estimations, standard errors displayed in parenthesis, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Dependent variable is a count variable for specifications (1)-(3), counting the number of defacto non-compliant implementation practices at the firm; dependent variable is a dummy variable for specifications (4) and (5), indicating whether a firm defacto fully complies with all three primary aspects or none.

In summary, it can be said that if the hypothetical situation is known at the firm it does not change the respondents' ability to better discriminate between CWS and TAW. For compliant firms, the choice of type of contract is determined by a basic but not detailed knowledge of the legal aspects. Firms that show a high level of defacto non-compliant behavior lack any legal literacy when it comes to discriminating between CWS and TAW. This implies that they are not fully aware of the TAW regulations and their non-compliant behavior is due to ignorance rather than fraudulence.

At this point, I want to stress that the analysis of this paper is limited such that it cannot identify juridical non-compliance. Even if I classify some firms' implementation practices as non-compliant, it does not imply that their behaviour would be considered illegal in a trial at court. The survey uses questions which are underlying the investigations by labor inspectors and

judges as well. Yet the survey is simplifying ambiguous situations and misses out the details an in-depth inspection would probably find. Nonetheless, non-compliant firms as defined in my analysis can be considered suspected cases where labor inspectors start a thorough investigation.

The results of my analyses are in line with the economic literature and theories on compliance. In Germany the probability of being caught and the amount of the fine to be paid are both small. In the absence of a credible threat, non-compliance is the optimal choice for firms. It is therefore not surprising that there are indications for a considerable size of non-compliance with TAW regulations. Behavioral economics provides insights into how regulations should be designed. On the one hand, it has been shown that agents prefer default options. When implementing external staffing CWS seems to be the default option. This is a reasonable choice considering that this is the seemingly unregulated contracting form. On the other hand, regulations should be simple and convenient in order to allow agents to understand and willingly comply with them. The more detailed regulations are, the more likely they are to be misunderstood. The fairly complex regulatory setting in Germany comes at the cost of legal literacy of the affected firms. Overall, firms are equipped with basic knowledge at best.

5 Conclusion

In this paper I investigate compliance or non-compliance with Temporary Agency Work Regulations when firms implement external staffing by contracts for work and services. Due to the lack of enforcement in Germany, firms have incentives for non-compliance as this enables them to make use of the advantages of both alternative work arrangements by discarding their respective disadvantages.

I find indications for non-compliance with temporary agency work regulations when firms outsource to service contractors: seven percent of outsourcing firms officially use a Contract for Work and Services as contracting form but implement it like temporary agency work and hence consist a group of non-compliers. The workers are officially labelled as contract workers while in fact they conduct work which should be subject to temporary agency work regulations and registration. Official statistics hence under-report the defacto extent of TAW in Germany. Officially registered temporary agency work amounts to 990.000 workers in 2016. Possibly up to 400.000 contract workers are misclassified, hence about 28 percent of defacto temporary agency may not be reported as such in official employment statistics. By outsourcing to service

contractors, firms can avoid paying minimum wages of the temporary agency sector and exclude the workers from firm wage premia, which may cause substantial earnings losses for the affected workers.

Furthermore, I find that firms have a basic knowledge of the differentiation between the two forms of alternative work arrangements. On average they do not exhibit a detailed legal literacy and have a bias towards the unregulated outsourcing to service contractors. Firms using temporary agency work as well, are better able to differentiate the two staffing arrangements than firms not employing temporary agency workers. Moreover, I find that non-complying firms show basically no legal literacy in differentiating contract work from temp work. Hence, they do not know better when non-complying with temporary agency work regulations. The limited legal literacy of most of the firms indicates that the legal aspects of regulations are not always fully understood. Many firms implementing contract work seem not to be aware of the problematic legal grayzone with respect to temporary agency work. The analysis of legal literacy is based on a sample not fully representative for German firms, hence I might miss the fraudulent misclassifications. Nevertheless, this work provides evidence for non-compliance with the regulations of temporary agency work. While firms presumably profit from their actions, the effects for affected workers are unclear and a question for further research.

The intention of legislators to protect the vulnerable temporary agency workers misses its target if the group is not fully captured. As I do not find indications for informed non-compliance, increasing the ability to comply would be the first course of action in order to increase compliance with temporary agency work regulations. Providing helpful information and reducing the complexity of regulations would help agents to better understand and classify their external staffing arrangements. Another credible way to ensure enforcement of the regulations is to increase the incentives to comply with them. In order to make compliance the optimal choice in the German setting, the costs and probability of being caught could be increased. This in turn may reinforce also the incentives for firms to be informed, thereby having an effect on both the ability and the willingness to comply. There are various methods to incentivize compliance, starting with increasing fines for non-compliers or establishing a unit of labor investigators dedicated to this issue. Collecting data on the use of contracting out on an administrative level would support enforcement by improving labor investigators' chances of finding non-complying firms. Moreover, it would improve the data base for further research on the effects of outsourcing to a service contractor.

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A Appendix

Table 7: Statistics on Compliers and Non-Compliers

	sample	full complier	non- complier
<u>Outsourcing because of...</u>			
Wage savings	36.1	31.8*	42.5***
Specialized staff	75.9	81.3	82.2
Better alternative to temporary agency work	27.7	23.5***	37.2***
Flexible labor input	40.3	32.9***	60.0***
<u>Firm characteristics</u>			
Average number of employees	37.8	26.6*	37.4
Firm uses TAW in %	12.0	6.5***	12.2
N	2,832	819	188

Notes: Sample in Column 1 includes firm for which compliance or non-compliance can be investigated. Significant differences from this sample are indicated by * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Dimensions and Attributes of the Vignettes

Dimensions	Attributes	Type of Contract
Primary Aspects		
Instructions	1. The external workers are instructed by an external supervisor.	CWS
	2. The external workers are instructed by (one of) your employees.	TAW
Check	1. Your firm checks and accepts the final product.	CWS
	2. Your firm or one of your employees controls the work process.	TAW
Rework	1. In case of a defect work, the external firm pays it to be remedied or newly produced.	CWS
	2. In case of a defect work, your firm pays it to be remedied or newly produced.	TAW
Secondary Aspects		
Work space	1. The external workers work in a separate work space.	CWS
	2. The external workers work in the work space of the own core workforce.	TAW
Tools	1. The external workers bring and use their own tools.	CWS
	2. The external workers use the tools provided by your firm.	TAW
Tasks	1. The external workers conduct different tasks than your core workforce.	CWS
	2. The external workers conduct similar tasks as the core workforce.	TAW

Table 9: Sample Statistics - Vignette level

	Full vignette sample	Linked vignette sample
Panel A: Individual vignette dimension takes the value of...		
work space representing CWS	0.5025	0.5008
work tools representing CWS	0.4946	0.5114
tasks representing CWS	0.5442	0.5081
instructions representing CWS	0.4775	0.4770
check representing CWS	0.4937	0.4819
rework representing CWS	0.5125	0.5065
Panel B: Aggregated vignette information		
all primary dimensions represent CWS	0.0975	0.1155
all primary dimensions represent TAW	0.1019	0.1229
vignette situation is known at firm	0.4040	0.4336
N	3200	1220

Notes: Panel A shows the share of how often the listed attribute of the six individual vignette dimensions were realized. Panel B shows the share of vignettes where all primary dimensions represent CWS or TAW respectively and how often firms indicated that the hypothetical situation is known at the firm.

Table 10: Results - Hypothetical Knowledge cont'd

Dep.Var: CWS chosen for hypothetical setting	(1) Probit	(2) marginal effects	(3) firms enclined to use CWS	(4) aware of legal grayzones
separate work space	0.135*** (0.047)	0.050***	0.054** (0.024)	0.093*** (0.022)
own tools	0.068 (0.047)	0.025	0.027 (0.02)	0.041** (0.02)
different tasks	0.123*** (0.047)	0.045***	0.073*** (0.023)	0.035 (0.022)
instructed by ext. supervisor	0.297*** (0.047)	0.110***	0.123*** (0.024)	0.140*** (0.021)
final product is checked	0.110*** (0.47)	0.040***	0.063*** (0.023)	0.070*** (0.023)
rework paid by ext. firm	0.269*** (0.047)	0.100***	0.144*** (0.024)	0.105*** (0.023)
Constant	-0.161*** (0.062)		0.420*** (0.029)	0.425*** (0.029)
FE	No		FE	FE
N	3013		1343	1508

Notes: * p<0.10, ** p<0.05, *** p<0.01, standard errors clustered at the firm level presented in parenthesis. Specification (1) is a probit estimation, the corresponding marginal effects (dydx) are indicated in Column (2). Specification (3) restricts the sample to firms who are inclined to use CWS in unclear settings. Specification (4) restricts the sample to firms who are aware of legal grayzones.



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