

Beyond adoption: SA8000 decertification in the food industry

Teresa Turzo

Department of Law and Economics, UnitelmaSapienza University of Rome, Roma, Italy

Cecilia Chirieleison

Department of Political Sciences, University of Perugia, Perugia, Italy

Alessandro Montrone

Department of Economics, University of Perugia, Perugia, Italy, and

Luca Scrucca

Department of Statistical Sciences, University of Bologna, Bologna, Italy

Abstract

Purpose – This study examines decertification from the SA8000 standard in the food industry, focussing on how long firms remain certified and how the likelihood of decertification changes across certification renewal cycles, over time and between firms based in developed and developing countries. By shifting attention from adoption to the maintenance of certification, the study addresses an underexplored aspect of social accountability in the food industry.

Design/methodology/approach – The analysis draws on the complete Social Accountability Accreditation Services (SAAS) database covering a 25-year period and all food-industry firms that obtained SA8000 certification at least once since the issuance of the standard in 1997. The decertification rate is calculated as the proportion of firms that lost certification across the covariate levels considered. A Beta-binomial model estimated within a Bayesian inferential framework is used to test the three hypotheses.

Findings – The temporal analysis does not reveal a sustained decline in the likelihood of decertification, which remains relatively stable over the period examined. However, decertification remains relatively widespread. The likelihood of decertification is highest among food-industry firms with zero or one renewal, decreases after the second renewal, and becomes very low among firms completing three or more renewals. Firms based in developing countries also show a higher estimated likelihood of decertification than those based in developed countries.

Originality/value – This is the first study to analyse SA8000 decertification within a single industry using population-level data. By providing longitudinal, industry-specific evidence, this study complements the existing literature focused primarily on SA8000 adoption and contributes to research on certification-based standards, labour governance, and sustainability in food supply chains.

Keywords Bayesian estimation, Certification-based standard, Decertification, Food-industry firms, Social accountability 8000, SA8000

Paper type Research article

1. Introduction

Social accountability refers to the obligation of firms to provide an account of their conduct to stakeholders and to make their social practices visible, assessable and open to scrutiny (Gray *et al.*, 1996; Roberts, 1991; Sinclair, 1995). Social accountability certification has become an increasingly relevant element of corporate strategy in industries where labour conditions are closely scrutinised by public opinion, media, regulators, buyers, and other stakeholders. The food industry belongs to these contexts, as it combines labour-intensive production processes,



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recurrent scrutiny over working conditions across the supply chain, and a long tradition of external monitoring through certification schemes (De Cristofaro *et al.*, 2023; Maloni and Brown, 2006; Manning, 2013; Poetz *et al.*, 2013). Such scrutiny becomes particularly relevant when sourcing involves developing countries, where weaker labour-law enforcement, limited monitoring capacities and higher exposure to social risks may make the maintenance of certified labour practices more demanding (Canavari *et al.*, 2010; Maloni and Brown, 2006; Orzes *et al.*, 2017). Several firms have adopted SA8000 to demonstrate compliance with internationally recognised labour standards and provide audited evidence on working conditions (Gilbert and Rasche, 2007; Orzes *et al.*, 2017).

SA8000 is a certification-based standard introduced in 1997 by Social Accountability International (SAI). Within the broader landscape of certification schemes used in food supply chains, SA8000 focuses specifically on social accountability and labour rights, thereby complementing other forms of certification that address different dimensions of responsible sourcing. SA8000 refers to labour rights and its requirements address topics falling in areas where public expectations tend to be highly sensitive (Podrecca *et al.*, 2021), such as child and forced labour, working hours, health and safety, discrimination, freedom of association, disciplinary practices, remuneration, and continuous improvement processes. The obtainment of SA8000 certification requires a third-party audit conducted by certification bodies accredited by Social Accountability Accreditation Services (SAAS), the accreditation body responsible for overseeing SA8000 certification bodies. Once obtained, SA8000 certification lasts three years, during which certified firms undergo regular audits. Furthermore, SA8000 is a supply-chain certification standard, as its requirements extend beyond the certified firm to labour practices across successive supplier tiers, enforced through audits, monitoring, and corrective-action procedures (Chirieleison and Rizzi, 2020).

Existing research shows that firms adopt and maintain SA8000 as it can reinforce legitimacy, improve coordination with business partners, and support firms in addressing expectations concerning the fair treatment of employees in sensitive industries (Kähkönen and Lintukangas, 2022). However, SA8000 maintenance requires resources to meet audits, implement corrective actions, and sustain internal monitoring systems. Thus, firms tend to evaluate on an ongoing basis whether the benefits associated with the certified status outweigh the effort required to maintain it (Podrecca *et al.*, 2021), and decertification becomes a reasonable option when this assessment becomes unfavourable (Marcuzzi *et al.*, 2023b). A similar perspective has emerged in the literature on other management system standards. Research on quality and environmental management standards shows that decertification is not limited to the loss of a certificate but reflects the reassessment of whether certification still provides sufficient internal and external benefits compared with the costs and organisational effort required to maintain it (Clougherty and Grajek, 2023; Mosgaard and Kristensen, 2020). In the case of ISO 9001, research on maintenance, decertification and recertification moves beyond adoption and examines the conditions under which firms maintain or discontinue certification, showing that this decision may depend on costs, organisational requirements, perceived benefits, customer demand, or changes in the strategic value of the standard over time (Camango and Cândido, 2023; Cândido and Ferreira, 2023).

When analysing SA8000, the relevant question is no longer limited to how many firms adopt the standard but extends to how long they remain certified. To date, SA8000 decertification within the food industry has not been examined, leaving largely unexplored how the likelihood of decertification varies across renewal cycles, over time, and across country contexts. These issues point to distinct gaps in the current literature.

The first gap concerns the absence of industry-focused evidence. Prior studies examine decertification by employing cross-industry samples (Marcuzzi *et al.*, 2023a, b; Podrecca *et al.*, 2021; Turzo *et al.*, 2025), neglecting the specific features of the food industry that may affect firms' decisions to maintain certification. This industry-specific focus is relevant because food-industry firms operate in supply chains where labour-intensive activities, reputational exposure, buyer requirements and external monitoring are closely connected

(Maloni and Brown, 2006; Manning, 2013). SA8000 may increase firms' credibility by signalling compliance with fair labour practices, but it may also impose significant monitoring and organisational demands, especially when labour practices extend across multiple supplier tiers. For this reason, the decision to maintain or discontinue certification may be particularly sensitive to supply-chain expectations and stakeholder scrutiny.

The second gap concerns how firms' permanence in the certification system evolves over time. A recent study shows that many firms discontinue SA8000 during the early cycles of certification, before renewal cycles consolidate internal routines and the certified status becomes embedded in organisational practices (Turzo *et al.*, 2025). However, the validity of this pattern has never been examined within a single industry, and even less so within the food industry.

The third gap concerns how the country in which a firm is based influences the likelihood of SA8000 decertification. Prior studies note that firms based in developing countries often operate in settings where labour-law enforcement is weaker, making SA8000 maintenance more demanding (Canavari *et al.*, 2010). However, no empirical evidence examines whether, within the food industry, firms based in developing countries present a higher likelihood of decertification than those based in developed ones.

The present study aims to fill these gaps by examining the complete population of food-industry firms that obtained SA8000 certification from the introduction of the standard to the present.

The study employs the SAAS database (Social Accountability Accreditation Services, 2025) which records organisations that have obtained SA8000 certification and provides information on certification dates, renewal cycles and current certification status. The information contained in this database allows the reconstruction of firms' certification histories and the identification of whether certification was maintained or discontinued over time. Drawing on legitimacy theory, the study examines how the likelihood of decertification changes across certification renewal cycles, over time, and between firms based in developed and developing countries. A Beta–Binomial model implemented within a Bayesian inferential framework allows for a careful assessment of whether food-industry firms with more consolidated certification histories, those operating in more recent years or those based in countries with a specific development status show different likelihoods of decertification.

The paper is structured as follows. Section 2 reviews the literature on social accountability in the food industry, the SA8000 standard and presents the theoretical framework. Section 3 develops hypotheses, while Section 4 presents the data and methods. Section 5 reports the results and Section 6 discusses the findings. Section 7 presents the implications for research, managerial practice, policy and society, and Section 8 concludes the study.

2. Literature review and theoretical framework

2.1 Social accountability standards in the food industry

In the food industry, social accountability concerns the ability of firms to make their labour practices visible and assessable to stakeholders across the supply chain. The food industry has become one of the sectors most exposed to social accountability pressures due to its global supply chains, labour intensity, and interdependence among producers, intermediaries, and retailers (De Cristofaro *et al.*, 2023). Persistent social and reputational risks related to working conditions, labour rights, and transparency have led firms to adopt social accountability tools in response to growing stakeholder and regulatory expectations (Maloni and Brown, 2006; Manning, 2013).

Increasing demands for ethical conduct and traceability have progressively transformed social responsibility from a voluntary orientation into an operational requirement embedded in supply-chain governance and competitive positioning (Coppola and Ianuario, 2017). Collaboration among supply-chain partners relies on shared accountability frameworks that

mitigate interconnected reputational risks through common standards (Kähkönen and Lintukangas, 2022).

Firms in the food industry are particularly exposed to the social implications of their upstream supply-chain activities, which often take place in developing countries characterised by weaker institutional controls and limited guarantees of fair treatment of employees (Coppola and Ianuario, 2017). Global supply chains require mechanisms that ensure the ethical reliability of sourcing and reduce exposure to labour-related risks, since reputational damage can spread rapidly from one firm to another within the same supply chain, with particularly harmful effects for the lead company (Manning *et al.*, 2006). Certification standards, through their monitoring systems and requirements, provide an external guarantee of compliance while simultaneously reinforcing the internal coordination of responsible practices among firms in the same supply chain (De Cristofaro *et al.*, 2023). For producers and processors based in developed countries, certification contributes to maintaining market credibility and consumer trust, whereas for suppliers in developing contexts it frequently represents a necessary condition for participation in international trade networks (Coppola and Ianuario, 2017).

2.2 The fair treatment of employees in the food industry

Fair labour practices represent one of the most sensitive dimensions of social accountability in the food industry. Supply chains such as coffee, cocoa, and palm oil depend on suppliers in developing countries and face risks of worker exploitation and informal employment (Maloni and Brown, 2006). Lead firms, usually based in developed countries, typically retain high-value activities while outsourcing labour-intensive stages to lower-tier suppliers, shifting the burden of labour standards compliance to firms operating in contexts with weaker safeguards (Maloni and Brown, 2006; Manning, 2013).

However, vulnerabilities in working conditions do not depend solely on the location of production, but also on how buyer requirements, cost pressures and monitoring arrangements influence employment practices along the supply chain (Beschorner and Müller, 2007). Evidence shows that violations of workers' rights in food production can also arise in advanced economies, particularly in labour-intensive stages such as harvesting or processing. The Italian tomato industry provides a documented example, even in a developed economy (Howard and Forin, 2019).

While compliance is often driven by external expectations of buyers, industry associations, non-governmental organisations (NGOs), and other stakeholders, the pursuit of fair employment practices also brings internal advantages. It reinforces organisational reliability, supports supply-chain resilience, and helps firms sustain long-term stakeholder confidence (Kähkönen and Lintukangas, 2022).

2.3 SA8000 standard in the food industry: certification and decertification patterns

Several factors promote SA8000 adoption. Certification allows firms to gain legitimacy, reinforce relationships with key stakeholders, and achieve differentiation-based competitive advantage (Orzes *et al.*, 2017). In particular, the certified status offers firms a portable assurance mechanism that can consolidate business relationships with buyers and investors as well as with those who monitor labour conditions across global chains (Orzes *et al.*, 2017). In labour-intensive industries, SA8000 links accountability and governance by requiring suppliers to align with its criteria and the leading firm of the supply chain uses the standard to extend oversight beyond its organisational boundaries, reducing the risk that labour abuses in remote tiers undermine its legitimacy (Turzo *et al.*, 2024).

Although widely recognised in the food industry, maintaining SA8000 requires sustained organisational effort (De Cristofaro *et al.*, 2023). Prior research shows that managerial decisions about whether to maintain SA8000 certification tend to follow an implicit comparison between the contribution of certification to the firm and the effort required to

preserve it. The comparison concerns the extent to which certification supports relations with buyers, strengthens credibility within the supply chain, and sustains the legitimacy of the firm, relative to the organisational demands associated with audits, monitoring processes and corrective actions (Marcuzzi *et al.*, 2023b). This assessment becomes even more relevant in markets characterised by strong price competition and limited profit margins, where the benefits associated with SA8000 tend to be carefully compared with the costs required to maintain it (Musso *et al.*, 2022). As the symbolic and differentiating value of SA8000 may decline as the standard becomes more widespread, the legitimacy associated with certification may also weaken, reinforcing the conditions under which managers reconsider whether to maintain the certified status (Marcuzzi *et al.*, 2023a, b; Podrecca *et al.*, 2021).

Studies on other certification standards show that firms may decertify when the certified status no longer aligns with their organisational priorities, stakeholder expectations, or perceived performance outcomes (Podrecca *et al.*, 2025). Evidence from ISO 9001 studies shows that decertification may be associated with certification costs, limited or declining benefits, reduced customer demand, the adoption of alternative standards, difficulties in maintaining certification over time, and organisational characteristics such as radical innovation (Camango and Cândido, 2023; Cândido and Ferreira, 2023; Clougherty and Grajek, 2023; Delfino *et al.*, 2024). Studies on environmental management standards reach a similar interpretation, showing that firms may withdraw from EMAS or ISO 14001 when renewal becomes difficult to justify in relation to costs, resource constraints, limited stakeholder recognition, or insufficient perceived benefits (Heras-Saizarbitoria *et al.*, 2016; Merli and Preziosi, 2018; Mosgaard and Kristensen, 2020). Decertification may also be followed by different post-decertification paths, ranging from the complete abandonment of the certification requirements to the retention of selected ones, even without formal certification (Mosgaard and Kristensen, 2020; Podrecca *et al.*, 2021, 2025).

Within this broader literature, research specifically examining SA8000 decertification remains limited and has emerged only in the last five years. To the best of our knowledge, only a few studies have investigated SA8000 decertification (Marcuzzi *et al.*, 2023b; Podrecca *et al.*, 2021; Turzo *et al.*, 2025).

Podrecca *et al.* (2021) provide a quantitative analysis of 136 large, listed firms. The results showed an initial increase in sales and profitability after SA8000 certification, followed by a decline over time. After decertification, labour productivity and profitability increase, while sales remain constant (Podrecca *et al.*, 2021). Industries with different levels of labour intensity present different trends, indicating that SA8000 certification and decertification choices are influenced by how labour conditions are organised, monitored and valued within each industry, and by stakeholder expectations regarding these practices (Podrecca *et al.*, 2021).

Marcuzzi *et al.* (2023b) present qualitative evidence. The analysis shows that firms decertify from SA8000 when the effort required to maintain the certified status no longer corresponds to its perceived benefits. The issues that lead firms toward decertification include the financial and organisational costs of audits and corrective actions, the reduced legitimacy and reputational value of SA8000, and changes in external conditions such as buyer requirements, market expectations and the managerial priorities that had originally motivated certification.

A more recent analysis of the full SAAS dataset introduces two further elements (Turzo *et al.*, 2025). First, SA8000 decertification is concentrated in the early certification cycles. Most firms decertify from SA8000 at the end of the first three-year period or after a single renewal, then each additional renewal is associated with a significantly lower probability of SA8000 decertification. Second, the likelihood of SA8000 decertification varies across industries. Firms in labour-intensive industries, where buyers, media, NGOs, and industry associations pay close attention to working conditions, show lower decertification rates than non-labour-intensive industries. In these industries, firms rely on SA8000 to preserve their legitimacy in the eyes of stakeholders, because the certification helps demonstrate that their

2.4 Legitimacy theory and sustainability certification and decertification

Legitimacy theory offers a lens through which the adoption of SA8000 can be interpreted as part of the broader effort of firms to align their conduct with the expectations of stakeholders regarding the fair treatment of employees. Under this theoretical lens, firms operate under a social contract whose terms are partly explicit – through laws and other formal regulations – and partly determined by changing public expectations (Deegan, 2002). The ability of a firm to continue operating depends on the perception that its contribution outweighs the social and environmental costs associated with its activities. When firms belong to industries where working conditions attract much attention from buyers, media, and civil-society groups, NGOs and industry associations, the expectation that their labour practices meet socially accepted standards becomes more pressing. Here, certification becomes one of the strategic tools through which firms can demonstrate that their conduct aligns with the implicit obligations that allow them to operate (Deegan, 2002).

In this regard, SA8000 certification is able to convert labour rights into auditable requirements (Orzes *et al.*, 2017). Furthermore, it provides firms with a formal accountability tool, enabling them to externalise compliance with norms that stakeholders consider socially appropriate (Gilbert and Rasche, 2007). By providing audited evidence where direct observation is impossible, SA8000 narrows the distance between what stakeholders expect and what they can verify, reducing the likelihood that a perceived misalignment becomes a legitimacy issue (Podrecca *et al.*, 2021). The same logic underpins much of the social and environmental disclosure literature, where firms disclose information, adopt standards or introduce monitoring processes to maintain alignment with societal expectations when they perceive that corporate practices may be contested (Cho *et al.*, 2015; Deegan, 2002).

However, legitimacy is not something “static”. Expectations evolve, and the strategic value of certification can weaken if the standard becomes widespread or if stakeholders begin to expect different forms of documentation and assurances when evaluating whether firms’ labour practices align with socially accepted standards (Deegan, 2002). When these shifts occur, firms may reassess whether the certification continues to perform its legitimising function (Turzo *et al.*, 2025). The assessment becomes even more delicate when the corporate effort necessary to maintain SA8000 certification increases or when the costs of audits, monitoring and corrective actions outweigh the reputational or relational value derived from the certified status (Marcuzzi *et al.*, 2023b). As shown by prior research, managers respond to such pressures by reconsidering whether certification still supports the credibility of their labour practices for the most relevant stakeholders (Podrecca *et al.*, 2021).

Through the lens of legitimacy theory, decertification does not automatically signal an indifference toward labour conditions. Rather, it can signal a change in how firms choose to demonstrate that their conduct remains within the boundaries that stakeholders consider acceptable. Some firms may turn to alternative standards, others may continue to apply selected SA8000 requirements without formal certification, and others may rely on different forms of accountability to reduce the risk of legitimacy loss (Marcuzzi *et al.*, 2023b). The key point is that firms assess SA8000 in terms of its capacity to support their legitimacy within the social and institutional environment in which they operate. When this effect decreases, decertification becomes a plausible choice.

3. Hypotheses development

The factors that give SA8000 its strategic value can, when their contribution decreases, also weaken the rationale for maintaining the certified status, leading firms to consider decertification (De Cristofaro *et al.*, 2023; Marcuzzi *et al.*, 2023a, b). Research on other

certification standards suggests that certification should be viewed as an ongoing process rather than a one-time adoption decision, as firms continuously evaluate the benefits derived from certification against the organisational effort and resources required to maintain it over time (Camango and Cândido, 2023; Cândido and Ferreira, 2022; de Saboya *et al.*, 2025). This perspective is particularly relevant for understanding SA8000 decertification, since decisions to retain or abandon certification emerge from the interplay between certification benefits, maintenance requirements and changing organisational conditions. Three dimensions can influence the decision of managers to decertify from SA8000: the number of renewal cycles completed by the firm, the evolution of decertification over time within the industry, and the development status of the country in which the firm operates. The distinction between renewal cycles and time is relevant because they refer to different mechanisms. Renewal cycles reflect the certification history of each firm and the extent to which SA8000 becomes embedded in organisational routines. Time, by contrast, reflects the broader evolution of SA8000 within the food industry and the changing recognition of the standard among stakeholders.

The first dimension, namely renewal cycles, concerns the extent to which certification requires firms to internalise SA8000 routines into their organisational practices and into the way they manage supply-chain relations (De Cristofaro *et al.*, 2023; Manning *et al.*, 2006). Renewal after renewal, corporate actions to comply with SA8000 requirements become part of established routines, reducing the discontinuities typical of early certification stages (Podrecca *et al.*, 2021). Evidence from other certification-based standards suggests that maintenance motivations and internal benefits become more relevant when firms progressively incorporate the standard into their organisational processes (de Saboya *et al.*, 2025). In the case of SA8000, this suggests that repeated renewal cycles may reflect a stronger integration of the standard into firms' routines and supply-chain practices. This leads us to the following hypothesis:

- H1.* Food-industry firms with a higher number of SA8000 renewal cycles present a lower likelihood of decertification

The second dimension, namely the evolution of decertification over time within the industry, concerns the changing recognition of SA8000 among buyers and other stakeholders. As SA8000 becomes more widespread within the food industry, and therefore more familiar to these actors, its legitimising power for certified firms becomes more established (Orzes *et al.*, 2017). Studies on other certification-based standards show that certification pathways may follow different phases of diffusion, including growth, maturity and decline, as the attractiveness and distinctiveness of a standard change over time (Marimon *et al.*, 2009). More recent evidence on ISO 9001 further suggests that, after a phase of decline, certification levels may stabilise when incentives to certification and incentives to decertification reach a new balance (Mastrogiacomo *et al.*, 2021). Consequently, in more recent years, maintaining SA8000 certification may have been considered more aligned with stakeholder expectations (Podrecca *et al.*, 2021). For SA8000 in the food industry, this temporal dimension is relevant because the perceived value of certification depends on how strongly buyers, regulators and other stakeholders continue to recognise the standard as credible evidence of fair labour practices. Thus, we posit the following hypothesis:

- H2.* In the food industry, firms show a decreasing likelihood of decertification over time.

The third dimension, namely the development status of the country in which the firm operates, concerns the different conditions under which firms maintain SA8000 certification. Food-industry firms based in developing countries often work in settings where labour-law enforcement is weaker and public monitoring is less effective (Orzes *et al.*, 2017). Thus, the maintenance of SA8000 can be demanding for firms that operate with limited resources or under volatile market conditions, because audits, monitoring activities and corrective actions require investments that these firms may struggle to sustain (Marcuzzi *et al.*, 2023b). Country-level studies on ISO 9001 show that certification pathways differ across national contexts and are associated with economic development, trade relations and supply-chain pressures

(Salgado *et al.*, 2016; Sampaio *et al.*, 2011). These differences support the use of development status of the country in which the firm is based as a relevant lens for examining whether firms face different incentives and constraints in maintaining certification over time. Based on these considerations, we posit the following hypothesis:

- H3.* Food-industry firms based in developing countries present a higher likelihood of decertification than those based in developed countries.

4. Method

4.1 Data

The present study drew on a comprehensive dataset extracted from the SAAS database, accessed through the official SAI website on 31 December 2024. The dataset contained information on all firms that obtained SA8000 certification at least once from 1997 onward, including certification dates, renewal cycles, and current certification status.

For the purposes of this research, the analysis was restricted to firms belonging to the food industry. Data for 2022–2024 were partially incomplete, as several records lacked information on industry classification, certification status, or renewal history. Given the importance of these variables for ensuring temporal comparability and accurate estimation of the decertification rate, all observations referring to 2022–2024 were excluded from the analysis. The resulting analytical sample included 231 food firms that obtained SA8000 certification over a 25-year period.

For the analysis of [Hypothesis 2](#), the first years of the observation period (2001–2006) and the final years (2017–2021) were excluded. In the first years, the number of certified firms was still limited, and many firms had not yet completed a full three-year certification cycle. A similar issue affected the final years, as a substantial number of firms had obtained certification only recently and had not yet completed the three-year cycle. The analysis of [Hypothesis 2](#) was therefore restricted to the period 2007–2016.

4.2 Measures

As the SA8000 dataset did not include a ready-made indicator of decertification, we constructed the variable following the procedure applied in prior research ([Podrecca *et al.*, 2021](#); [Turzo *et al.*, 2025](#)). The dataset reported certification dates, renewal cycles, and current certification status. These fields allowed us to reconstruct each firm's certification history over time and to identify whether and when certification was discontinued. Based on this information, the decertification rate expressed the share of firms that lost certification within each analytical group considered in the study.

The official database included a binary indicator of current certification (yes/no), which we labelled *CertificationStatus*. We also defined *NumRenew*, the count of certification renewals for each firm, obtained by manually reviewing the sequence of recertification dates in the database, consistent with the procedure used in earlier research ([Podrecca *et al.*, 2021](#); [Turzo *et al.*, 2025](#)).

In addition, we constructed a dummy variable, *DevelopmentStatus*, that classified each firm as operating in a developed or developing country. The classification followed the country list adopted in this study and is based on the United Nations Statistics Division grouping of developed and developing countries ([UNCTAD, 2023](#)).

The decertification rate was then calculated as the proportion of decertified firms relative to the total number of certified and decertified firms for each covariate level (*NumRenew*, *Year*, and *DevelopmentStatus*). Specifically, the decertification rate for each covariate level *i* was computed as follows:

$$\text{Decertification rate}_i = \frac{\text{Decertified}_i}{\text{Certified}_i + \text{Decertified}_i} \quad (1)$$

4.3 Beta-Binomial model

In this study, the Bayesian inferential framework refers to parametric, model-based inference. More specifically, the analysis estimated the parameters of a specified probabilistic model for the decertification rates observed across the covariate levels considered. The estimation of rates was carried out through a Beta–binomial model implemented within a Bayesian inferential framework (Johnson *et al.*, 2022). Let the observed number of events be denoted as y_i , and the total number of observations at the same level of analysis as n_i . In this study, y_i corresponded to the number of decertification events, while n_i represented the total number of firms observed at the i^{th} level of the covariates under examination. The latter captures the categories to which the rate refers, such as the number of certification renewals or the classification of countries. The observed rate for each covariate level was thus expressed as the ratio y_i/n_i .

Within the Beta–binomial model, the probability of an event of interest, π_i , is assumed to follow a beta distribution with shape parameters α and β . In a Bayesian setting, this distribution is interpreted as the prior, which summarises the initial assumptions about the probability of observing a decertification event before incorporating the data:

$$\pi \sim \text{Beta}(\alpha, \beta). \quad (2)$$

When no prior information is available, the hyperparameters α and β are assigned non-informative priors, obtained by using the maximum likelihood estimates (MLEs) from the marginal likelihood of the Beta–binomial model.

The likelihood component is defined as a binomial process conditional on the probability parameter π :

$$Y_i | \pi \sim \text{Binomial}(n_i, \pi), \quad (3)$$

Applying Bayes' theorem, the posterior distribution of π_i is derived by combining prior beliefs with the observed data, resulting in the following posterior distribution:

$$\pi_i = (\pi | Y_i = y_i) \sim \text{Beta}(\alpha + y_i, \beta + n_i - y_i). \quad (4)$$

The posterior distribution represents the updated information about the probability parameter after accounting for the empirical evidence. From this distribution, maximum *a posteriori* (MAP) estimates of π_i were obtained as point estimates of the probability of decertification:

$$\hat{\pi}_i = \frac{\alpha + y_i - 1}{\alpha + \beta + n_i - 2} \quad (5)$$

Uncertainty around these estimates was quantified through credible intervals, which summarise the range within which the true value of π_i lies with a specified level of probability (for example, 95%). More specifically, the Highest Density Interval (HDI) represents the shortest interval that includes a given percentage of the posterior probability mass while maintaining the highest internal density.

Finally, model adequacy was evaluated using a posterior predictive *p-value* (Gelman *et al.*, 2013), which expresses the probability of obtaining an outcome as extreme as or more extreme than the observed one under the posterior predictive distribution. The null hypothesis assumes that the decertification rate is homogeneous across the covariate levels considered. As in classical inference, a low Bayesian *p-value* indicates that the null hypothesis may be rejected.

5. Results

5.1 Descriptive statistics

The sample covers the entire population of firms operating in the food industry that have obtained SA8000 certification at least once, for a total of 231 firms. They are based in 21 countries and represent all the food firms recorded in the SAAS database within the period analysed.

This section presents the main dimensions used to describe the sample and to clarify the role of each aspect in the subsequent analysis. It first reports the geographical distribution of certified firms. It then presents the yearly distribution, in absolute values, of SA8000 certifications and decertifications across the 25-year observation period. Yearly certifications are presented as an introductory descriptive aspect and are not used as a covariate in the estimation analysis. Yearly decertifications are presented as the target descriptive aspect and differ from the decertification rate estimated in the model. The subsequent analysis considers three covariate aspects: the number of SA8000 renewals, time, and development status of the country in which firms are based.

Figure 1 shows the geographical distribution of food-industry firms certified under the SA8000 standard for the period analysed.

Most of the certified firms are based in Italy, which represents the largest national share within the sample. This concentration is consistent with Italy's relatively high adoption of SA8000 and other international certification standards, and can be explained by two main factors (Llach *et al.*, 2015; Turzo *et al.*, 2024). First, Italian firms have historically benefited from public funding programs designed to promote the adoption of sustainability certification standards, including SA8000 (Chiarini and Vagnoni, 2017). Second, the food industry holds a relevant position in the Italian economy, being characterised by a dense and complex supply network (De Cristofaro *et al.*, 2023). Since SA8000 operates as a supply-chain-oriented standard, its diffusion among Italian firms also reflects the country's role in global agri-food value chains, where production activities in developing countries are connected with lead firms based in Italy, as in the case of the coffee industry.

Figure 2 presents the distribution over time, in absolute values, of SA8000 certifications and decertifications in the food industry.

Overall, the sample includes 231 food-industry firms that obtained SA8000 certification during the observation period. Of these, 139 firms decertified, while 92 remained certified at the end of the period. Although the SA8000 standard was introduced in 1997, the first certification in the food industry occurred only in 2001. The number of firms obtaining

Obs ● 20 ● 80 ● 200



Figure 1. Geographical distribution of SA8000-certified food industry firms, 1997–2021

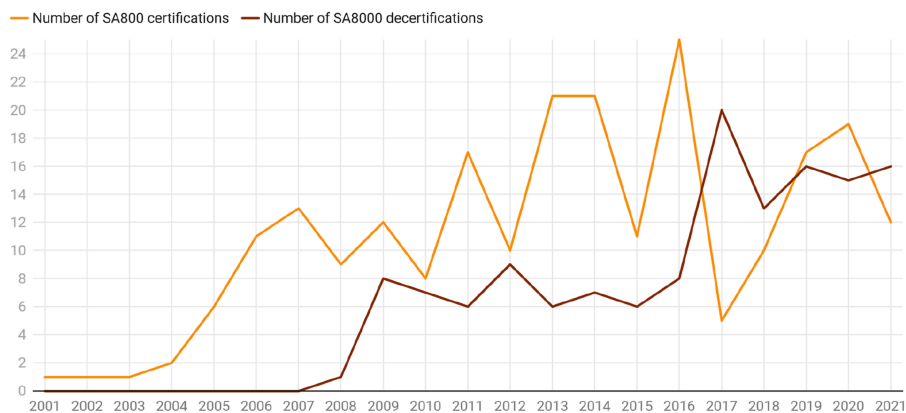


Figure 2. Number of yearly SA8000 certifications and decertifications in the food industry, in absolute values

SA8000 certification varies considerably during the following decade and reached its highest point in 2016, when 25 new certifications were issued. After this peak, annual certifications declined.

Decertifications began to emerge in 2008 and gradually increased over time. The sharpest increase was observed in 2017, when 20 firms lost their certification, representing the highest annual value recorded. In the following years, the number of decertifications remained relatively high but steady after 2019.

Table 1 summarises the distribution of SA8000 renewals among the firms in the sample, together with the corresponding number and percentage of decertified firms for each renewal level.

A smaller proportion of firms completed multiple renewals: 38 firms, corresponding to 16.5% of the sample, had two renewal cycles, while 26 firms, corresponding to 11.3%, had three or more renewal cycles. Among the 139 firms that decertified during the observation period, 79 had no renewal cycles, corresponding to 56.8% of all decertified firms; 35 had one renewal cycle, corresponding to 25.2%; and 21 had two renewal cycles, corresponding to 15.1%.

Table 1. Distribution of SA8000 renewals and decertifications among food industry firms

Number of SA8000 renewals	Number of firms (Abs.)	Share of total firms (Perc.)	Number of decertified firms (Abs.)	Share of total decertified firms (Perc.)
0	116	50.2%	79	56.8%
1	51	22.1%	35	25.2%
2	38	16.5%	21	15.1%
3	13	5.6%	3	2.2%
4	8	3.5%	1	0.7%
5	5	2.2%	0	0.0%
Tot.	231	100.0%	139	100.0%

Note(s): The percentages in the column “Share of total firms (Perc.)” are calculated over the total number of firms in the sample ($n = 231$). The percentages in the column “Share of total decertified firms (Perc.)” are calculated over the total number of decertified firms ($n = 139$)

With regard to development status of countries, out of 231 firms, 198 (85.7%) are based in developed countries and 33 (14.3%) in developing ones. Although most certified firms operate in developed countries, a relevant share is based in developing countries, confirming the worldwide diffusion of the SA8000 standard within the food industry. A difference emerges between the two groups, with 57.6% of firms in developed countries and 75.8% of those in developing countries having decertified during the period considered.

5.2 Beta-binomial model results

Table 2 reports the results of the Beta-Binomial model estimating the relationship between the decertification rate and the number of SA8000 renewals (*NumRenew*). The model was estimated within a Bayesian framework, with Maximum Likelihood Estimates (MLE), Maximum A Posteriori (MAP) estimates, and 95% Highest Density Intervals (HDI) reported for each renewal level.

The results reveal a pronounced decreasing trend in the estimated probability of decertification as the number of renewals increases. The decertification rate is highest among firms with zero renewals (*NumRenew* = 0), with a MAP estimate of 0.6752 and a 95% HDI ranging from 0.5885 to 0.7545. The estimated probability of decertification remains relatively high among firms with one renewal (0.6731) and two renewals (0.5418), but drops markedly thereafter, reaching 0.2446 among firms with three renewals and 0.1668 among those with four renewals. The estimated probability of decertification is close to zero among firms completing five renewal cycles, as no cases of decertification were recorded in this group. These findings statistically support the first hypothesis (H1), indicating that once firms pass the second renewal cycle, the likelihood of decertification declines steeply and remains close to null.

Table 3 reports the Bayesian Beta-Binomial estimates of the decertification rate over the period 2007–2016.

The results show that the estimated probability of decertification fluctuates over the period 2007–2016 without displaying a clear or sustained declining pattern. The MAP estimates range from 0.6233 in 2014 to 0.7724 in 2009 and generally remain between approximately 0.65 and 0.75. Lower estimates are observed in 2010 (0.6310), 2011 (0.6453), 2014 (0.6233), and 2015 (0.6375), while higher estimates are recorded in 2009 (0.7724), 2013 (0.7365), and 2016 (0.7383). Overall, the estimates oscillate around a relatively stable level and do not show a progressive decrease over time. The 95% HDIs overlap considerably across the years examined, providing further evidence that the yearly estimates do not follow a clearly differentiated temporal pattern. Accordingly, the results do not support H2.

Table 4 presents the Bayesian Beta-Binomial estimates of the decertification rate by development status of the countries where firms are based.

Table 2. Beta-binomial model estimates for decertification rate by number of renewals

NumRenew	Number of firms (Abs.)	...of which decertified (Abs.)	Average	MLE	MAP	HDI: 2.5%	HDI: 97.5%
0	116	79	0.6017	0.6810	0.6752	0.5885	0.7545
1	51	35	0.6017	0.6863	0.6731	0.5428	0.7875
2	38	21	0.6017	0.5526	0.5418	0.3909	0.6877
3	13	3	0.6017	0.2308	0.2446	0.0828	0.4814
4	8	1	0.6017	0.1250	0.1668	0.0267	0.4463
5	5	0	0.6017	0.0000	0.0953	0.0024	0.4220

Table 3. Beta-binomial model estimates for decertification rate by year

Year	Firms certified in the year (Abs.)	...of which later decertified (Abs.)	Average	MLE	MAP	HDI: 2.5%	HDI: 97.5%
2007	13	9	0.6017	0.6923	0.6766	0.4591	0.8515
2008	9	7	0.6017	0.7778	0.7254	0.4827	0.9003
2009	12	10	0.6017	0.8333	0.7724	0.5552	0.9199
2010	8	5	0.6017	0.6250	0.6310	0.3814	0.8395
2011	17	11	0.6017	0.6471	0.6453	0.4456	0.8152
2012	10	7	0.6017	0.7000	0.6786	0.4425	0.8643
2013	21	16	0.6017	0.7619	0.7365	0.5575	0.8742
2014	21	13	0.6017	0.6190	0.6233	0.4382	0.7867
2015	11	7	0.6017	0.6364	0.6375	0.4077	0.8305
2016	25	19	0.6017	0.7600	0.7383	0.5712	0.8685

Note(s): Year refers to the year in which firms obtained SA8000 certification. The column “Of which later decertified (Abs.)” reports the number of firms certified in that year that decertified during the observation period

Table 4. Beta-Binomial model estimates for decertification rate by development status

DevelopmentStatus	Number of firms (Abs.)	...of which decertified (Abs.)	Average	MLE	MAP	HDI: 2.5%	HDI: 97.5%
<i>Developed countries</i>	198	114	0.6017	0.5758	0.5897	0.5287	0.6489
<i>Developing countries</i>	33	25	0.6017	0.7576	0.6846	0.5839	0.7749

The estimated likelihood of decertification is higher among firms based in developing countries (MAP = 0.6846) than among those located in developed countries (MAP = 0.5897). The 95% HDIs range from 0.5287 to 0.6489 for developed-country firms and from 0.5839 to 0.7749 for developing-country firms. While the estimated mean values indicate a higher likelihood of decertification among firms operating in developing countries, the partially overlapping HDIs suggest that this difference is not statistically distinct. The wider HDI observed for developing-country firms also reflects greater posterior uncertainty, mainly due to the smaller number of observations in this group. Thus, these results provide only partial support for the third hypothesis (H3), indicating a higher decertification tendency among developing-country firms, although the Bayesian estimates do not show a clearly distinct posterior distribution between the two groups.

6. Discussion

The findings show that SA8000 generates a diverse form of commitment among food-industry firms. Firms with zero or one certification renewals are more likely to decertify. In the earlier cycles, certification may function more as a trial phase in which managers assess whether the standard fits the operational profile of the firm and aligns with the expectations of their main stakeholders, without necessarily translating this assessment into measurable advantages. Firms that perceive an effective competitive advantage from certification tend to maintain SA8000, leading to a statistically significant decrease in decertification likelihood. This

interpretation is consistent with prior research showing that firms reassess SA8000 when the organisational effort required to maintain certification no longer corresponds to its perceived benefits (e.g. [Marcuzzi et al., 2023b](#); [Podrecca et al., 2021](#)). The finding also extends previous SA8000 research by showing that, within the food industry, renewal cycles are strongly associated with the likelihood of decertification. Research on other certification standards reaches a similar conclusion from different empirical settings, showing that certification maintenance depends on the benefits firms continue to obtain and on the organisational effort required to preserve the certified status over time ([Camango and Cândido, 2023](#); [Clougherty and Grajek, 2023](#); [de Saboya et al., 2025](#); [Mosgaard and Kristensen, 2020](#)).

The temporal analysis does not show a clear or sustained decline in the likelihood of decertification. The estimated rates fluctuate during the period 2007–2016 and remain relatively stable, generally between approximately 0.65 and 0.75. [Hypothesis 2](#) is therefore not supported. This finding suggests that the passage of time and the growing diffusion of SA8000 within the food industry have not, by themselves, led to a progressive reduction in the likelihood of decertification. During the period examined, firms appear to have continued to assess the value of certification in relation to its organisational demands and to the expectations of buyers and other stakeholders. From a legitimacy perspective, the relative stability of the estimated rates may indicate that the legitimising value of SA8000 remained broadly stable, without generating a progressively stronger incentive to maintain certification ([Deegan, 2002](#); [Gilbert and Rasche, 2007](#); [Orzes et al., 2017](#)). This pattern is consistent with evidence on ISO 9001 showing that certification systems may reach a phase of stabilisation when the incentives to maintain certification and those to decertify reach a new balance ([Mastrogiacomio et al., 2021](#)).

Differences between firms based in developed and developing countries point to the importance of the supply-chain orientation of SA8000. Firms based in developed countries, often positioned at the upper segments of the chain, rely on certification to reduce the exposure to legal, social, and reputational risks that may originate in labour-intensive production stages of suppliers in developing countries. The maintenance of SA8000 is therefore linked not only to their internal practices but also to the need to manage risks that extend across their supplier networks. This interpretation is consistent with studies showing that labour-related risks in food supply chains are distributed across multiple tiers and that lead firms use monitoring systems and certification schemes to manage reputational exposure arising from suppliers' practices ([Maloni and Brown, 2006](#); [Manning, 2013](#); [Kähkönen and Lintukangas, 2022](#)). The relevance of development status of countries where firms are based is also supported by research on ISO 9001, where certification pathways differ according to the economic and institutional conditions in which firms operate and are associated with development levels, trade relations and supply-chain pressures ([Sampaio et al., 2011](#); [Salgado et al., 2016](#)). This evidence and our findings suggest that certification maintenance is influenced by the broader economic and institutional environment in which firms operate. Thus, the results of the present study reinforce and extend this interpretation to SA8000, showing that firms located in developing countries are more likely to decertify from the standard.

For firms located in developing countries, which are generally suppliers or sub-suppliers of larger companies in the upper part of the supply chain, the function of SA8000 is strategically different. Certification can improve their corporate visibility among buyers, especially when many suppliers operate with similar cost structures and compete primarily on price. SA8000 may facilitate access to, or continuity within, supply chains coordinated by certified lead firms. This potential advantage, however, coexists with the difficulties tied to limited resources, unstable markets, and weaker institutional environments. The higher likelihood of decertification found in developing-country firms within the food industry may reflect the fact that SA8000 certification is strategically valuable and legitimacy-enhancing but maintaining the certified status can be challenging in the long term. In this respect, the study adds to SA8000 research by showing that the same certification may operate as a source

of legitimacy and as a demanding organisational commitment, especially where firms face more fragile conditions for sustaining audits, monitoring activities and corrective actions.

SA8000 requires firms to sustain a structured accountability system, extending from internal procedures to the monitoring of suppliers. In this sense, SA8000 operates as an accountability mechanism because it makes labour practices more visible, assessable and open to external scrutiny (Gray *et al.*, 1996; Roberts, 1991; Sinclair, 1995). Decertification tends to occur when managers conclude that the structure required by SA8000 no longer fits with the firm's operating conditions or when the certification no longer supports the firm's legitimacy by effectively signalling compliance with fair labour practices.

7. Implications for research, managerial practice, policy and society

The results provide relevant implications for research, managerial practice, policy and society regarding the factors associated with SA8000 decertification and the long-term maintenance of certification in the food industry.

From a research perspective, the study addresses three gaps in the literature on SA8000 decertification. First, it provides industry-specific evidence on a phenomenon that has mainly been examined through broader samples, thereby showing how decertification operates within a sector in which labour practices, supply-chain relations and external monitoring are closely connected. Second, it shifts attention from the adoption of SA8000 to the conditions under which firms maintain or discontinue the certified status over time. Third, it shows that renewal cycles and the development status of the countries where firms are based are associated with differences in the likelihood of decertification, while the temporal analysis does not reveal a clear or sustained declining pattern. The absence of a clear temporal decline also suggests that the consolidation of a certification standard cannot be inferred solely from the passage of time, as firm-level renewal experience appears to provide a more direct indication of certification continuity. In this respect, the study contributes to research on certification-based standards by showing that decertification should be examined as part of the longer-term relationship between firms and certification systems, including the renewal experience accumulated by firms and the broader conditions under which certification is maintained or discontinued.

Firms appear to maintain certification when they perceive stronger competitive advantages and enhanced legitimacy, while decertification emerges when these positive effects weaken or become too costly to sustain, especially for firms based in developing countries. From a practical perspective, the findings suggest that firms benefit from integrating SA8000 into stable organisational routines, and that difficulties in doing so may be linked to higher decertification rates. For managers, this means that SA8000 maintenance requires more than formal compliance with audit requirements. The lower likelihood of decertification among firms with more renewal cycles suggests that certification is more likely to be maintained when SA8000 procedures become part of stable organisational routines, including internal monitoring, supplier assessment and corrective-action processes. Managers should therefore treat the early certification cycles as a phase in which SA8000 routines, responsibilities and internal monitoring procedures need to be consolidated, rather than as a purely administrative step preceding renewal.

For regulators, standard-setting bodies and industry authorities, the evidence indicates that firms operating in more fragile institutional contexts may need support to preserve the monitoring structures required by SA8000 and to maintain access to supply chains that rely on certified labour practices. Certification bodies may also use these findings to identify moments in which the risk of decertification is higher, particularly during the early renewal cycles and among firms operating in contexts where resources and monitoring capacities are more constrained. This does not imply lowering the requirements of the standard but rather strengthening technical guidance and support mechanisms that help firms maintain credible compliance with SA8000 requirements over time. For policymakers, the higher likelihood of decertification among firms based in developing countries indicates that certification

maintenance is connected to broader institutional and economic conditions. Policy measures aimed at strengthening labour-law enforcement, technical assistance and supply-chain accountability may therefore support the continuity of certified labour practices, especially where firms face greater difficulty in sustaining audits, monitoring activities and corrective actions.

From a societal perspective, the findings suggest that SA8000 may contribute to the protection of employees by reinforcing the legitimacy of fair labour practices within food supply chains. This implication is particularly relevant in contexts where firms face higher risks of decertification due to weaker institutional conditions, limited resources, or more fragile monitoring structures. In these settings, societal legitimacy may become an additional factor supporting the maintenance of the certified status, since expectations from buyers, regulators, industry authorities and civil society can encourage firms to preserve SA8000-based labour practices over time.

8. Conclusions

Although SA8000 is widely used as a reference standard in food supply chains, prior research has mainly examined its adoption and implementation rather than the conditions under which firms maintain or discontinue certification (De Cristofaro *et al.*, 2023). The present study provides the first industry-specific evidence of SA8000 decertification, examining how the likelihood of decertification varies across renewal cycles, over time and according to country development status.

The results show that decertification remains relatively widespread and is more likely during the early certification cycles. The temporal analysis does not reveal a clear or sustained decline in the likelihood of decertification during the period 2007–2016, suggesting that the passage of time alone is not associated with greater continuity in SA8000 certification. The stronger pattern associated with renewal cycles indicates that firms' accumulated experience with the standard may be more closely connected with certification maintenance. Differences between developed- and developing-country firms suggest that SA8000 fulfils different strategic functions along the supply chain, with higher estimated decertification in developing countries reflecting both structural constraints and the difficulty of sustaining long-term compliance with the standard.

This study has some limitations. First, the analysis relies on the information available in the SAAS database. The use of population-level certification data allows the study to examine the full set of food-industry firms that obtained SA8000 certification during the observation period, but the database does not include detailed firm-level information on financial performance, ownership structure, export orientation or position within the supply chain. The absence of financial data prevents an assessment of whether economic performance influences decertification, and the lack of information on employee numbers limits the possibility of distinguishing patterns across firm sizes. Future research could combine data on certification histories with financial indicators and the number of employees to analyse how decertification from SA8000 varies according to these parameters within the food industry.

Second, the analysis focuses on the food industry as a whole. Although this choice is consistent with the aim of providing industry-specific evidence and with the structure of the full list made available by SAAS, the food industry includes heterogeneous activities in which the role of labour, the intensity of monitoring, and the exposure to social risks may differ. The historical dataset used for the analysis does not include a consistent sub-industry classification for food-industry firms across the full observation period. Although the current online SAI interface provides a more detailed industry classification, including food and beverage sub-categories, this information is provided through a different data structure and does not match the historical dataset in terms of temporal coverage and classification format. It is therefore not possible to reconstruct a consistent sub-industry classification for all firms across the full observation period. Future studies could build on the more detailed classification provided by

the recently updated SAI website to examine whether SA8000 decertification patterns vary across specific food-industry activities.

Third, the study identifies patterns of decertification but does not directly observe the managerial motivations underlying the decision to maintain or discontinue certification. The results indicate where the likelihood of decertification is higher, but they cannot fully capture how managers evaluate the balance between the organisational demands of SA8000 and the strategic value of the certified status. Future research could address this issue through qualitative studies or interviews aimed at examining how firms interpret the costs, benefits and legitimacy effects of maintaining SA8000 certification over time.

More broadly, the study invites reflection on the future of labour in the food industry and on the role of maintaining SA8000 certification in making fair labour practices visible, auditable and legitimate. Decertification may have consequences that extend beyond the individual firm, as it can weaken one of the mechanisms through which accountability for the fair treatment of employees is communicated to buyers, regulators, industry authorities and society. This is particularly relevant in food supply chains, where labour practices are often distributed across multiple tiers and the certified status helps make firms' commitments more visible and verifiable. Studying SA8000 decertification contributes to a broader reflection on how food-industry firms preserve legitimacy around fair labour practices when institutional conditions, monitoring structures and resource constraints make long-term compliance more difficult.

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Corresponding author

Luca Scrucca can be contacted at: luca.scrucca@unibo.it