

To train or not to train? Firms’ considerations in the knowledge economy

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Scholars in economics and political science have long studied the economic and institutional configurations conducive for the collective provision of private goods, such as education. What has largely been overlooked is the role of firms as providers of training and the factors supporting their ongoing continuation of training-provision. With the rise of the knowledge economy, training firms are facing pressures to upskill and adapt to new technologies, while at the same time maintaining in-firm vocational education and training (VET) attractive for young people. Using Hirschman’s “Exit, Voice, and Loyalty” framework, we examine how training firms’ voice channels, through membership in intermediate associations, and long-term strategic orientation of training affect considerations to exit or not exit from the VET system. We analyze survey data from over 1,700 firms in Switzerland and show that non-exit considerations are associated with membership in professional associations and retention-oriented training strategies. Our study contributes to understanding how private actors navigate their roles as providers of collective goods in various economic environments, revealing the conditions under which firms maintain or reconsider their commitment to the dual VET system.

1. Introduction

Private provision of collective goods has attracted scholarly interest for over half a century (Becker, 1964; Olson, 1965; Williamson, 1985; Ostrom, 1990; Streeck, 1992; Açemoglu and Pischke, 1998; Busemeyer and Trampusch, 2012; Martin and Swank, 2012; Bonoli and Emmenegger, 2022).

Economic and institutional literatures have provided extensive theoretical groundwork and empirical evidence to understand why and under what conditions private actors would invest in collective goods, such as education and training (Becker, 1964; Wolter et al., 2006; Açemoglu and Pischke, 1998; Culpepper, 2003; Martin and Swank, 2012; Busemeyer and Trampusch, 2012). Central arguments bring to the fore the possibilities to omit a ‘prisoners’ dilemma’ between actors (Finegold, 1991), leading to an under-provision of private-provided education (Emmenegger and Unterweger, 2021). By cooperation between actors (Culpepper, 2001, 2003, 2007; Schmitter and Streeck, 1999), enabling collective action to reduce possibilities of free-riding and poaching (Busemeyer, 2009), monopsony power of private actors to recover costs of training by “enabling employers to pay workers less than the marginal revenue product of labor” (Azar and Marinescu, 2024: 1) on regulated labour markets (Williamson, 1985; Açemoglu and Pischke, 1998), firms can be motivated to invest in training beyond their own needs (Busemeyer and Trampusch, 2012). What remains a black box is private actors’ willingness to *continue* providing education and training as a collective

good, especially in times of structural labour market transformations and technological advancement and declining collectivism (Streeck, 2009; Autor, 2010; Graf, 2018; Emmenegger and Seitzl 2019; Thelen and Busemeyer, 2012), fragilizing collective action, raising uncertainty about the recoup of investments, and changing the need for specialized skills.

Whereas privately provided education and training have benefitted millions of young people worldwide, not limited to the coordinated market economies such as Germany and Japan but also liberal states such as the US and the UK (Hall and Soskice, 2001; Estévez-Abe et al., 2001; Bosch and Charest, 2010; Busemeyer and Trampusch, 2012), it is of paramount interest to understand firms' motivations to continue their voluntary involvement as training providers. In this paper, we bridge institutional and economic literatures by asking, *what motivates firms to consider exit, or non-exit, from the dual vocational education and training system as providers of education and training?*

We answer this question by combining economic and institutional literatures with Albert O. Hirschman's seminal work from 1970, *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations, and States* ('EVL'), and its later contributions (Doellgast, 2022; Hoffman, 2006; Sverke and Hellgren, 2002; Dowding et al., 2003; Freeman and Medoff, 1984) on how actors respond to dissatisfaction with social systems. We understand training firms as 'members' of the dual VET 'system' in which they provide the collective good education and training, but which they are *free to leave* upon dissatisfaction. We engage with the EVL theory in the context of a coordinated market economy, where firms as actors are embedded in collective action traditions and cornerstones of the dual system (Culpepper, 2003; Culpepper and Thelen, 2008; Bonoli and Emmenegger, 2022).

This article proceeds as follows: in section 2, we review the literature on firms as providers of collective goods (in this case, education and training). In section 3 we develop hypotheses in dialogue with Hirschman's EVL model. We present data and methods in section 4 and our results in section 5. Sections 6 and 7 offer a discussion and concluding remarks.

2. Firms as providers of education and training

Countries have historically developed various skill formation systems (SFSs) to resolve the issue of fostering skills needed on the labor market while furnishing a broad share of the population with an education (Hall and Soskice, 2001; Mayer and Solga, 2008; Busemeyer and Trampusch, 2012; Culpepper, 2007). The seminal work of Hall and Soskice (2001) differentiates between the liberal market economies (LMEs) and coordinated market economies (CMEs). While former emphasizes general skills, often achieved through higher education institutions, driven by supply and demand conditions on competitive markets, the latter puts dual vocational education and training (VET), carried out partly in firms and in schools, at the center of the human capital production due to labor market regulations and strong industrial relations (Soskice, 1994; Hall and Soskice, 2001). With the limited involvement of the state, schools and the social partners in the employers' and employees' camp, and the voluntaristic and unregulated nature of the in-firm training provision and curricula, trained mid-skilled workers are lacking in LMEs (Hall and Soskice, 2001; Bosch and Charest, 2010: 4; Martin and Knudsen, 2010). In recent years, significant policy efforts have been made in the UK, Canada and Australia to revitalize vocational training as a response to shortages of skilled workers (Bosch and Charest, 2010). However, failures of collective action and cooperation to avoid problems of 'free riding' still disincentivizes firms to provide training as a collective good (Marsden, 1999; Crouch, 2005; Bosch and Charest, 2010; Wolter and Ryan, 2011)

In CMEs, such as Austria, Germany, Japan, and the Nordics, cooperation between the state, social partners and schools may overcome collective action problems through coordination across different industries through strong public and firm commitment to the provision of education and training (Acemoglu and Pischke, 1998; Hall and Soskice, 2001; Culpepper, 2003; Crouch, 2004; Busemeyer and Trampusch 2012; Bonoli and Emmenegger 2022). With the involvement of private firms as providers of education and training, CMEs share the costs of training with firms but allow the skills taught to the apprentices to be specifically adapted to sectoral needs (Acemoglu and Pischke, 1998; Busemeyer and Trampusch, 2012). Through monopsony power, given by labor market imperfections, firms may opt to invest in training knowing that the costs can be recouped afterwards by compressed wage structures and a reduced mobility of workers (Acemoglu and Pischke, 1998). Through sector- and branch-specific organizations of which firms can be members, the governance of the skill formation system rests on tripartite involvement of employers' and employees' organized interest groups and the state (Busemeyer and Trampusch, 2012; Bonoli and Emmenegger, 2022). Through collective action between these partners and training regulations and

common curricula for the occupations, free-rider problems are limited which lowers the economic risk firms take in investing in training (Marsden, 1999; Culpepper, 2000; Martin, 2005; Busemeyer, 2009).

However, with the rise of the knowledge economy, firms providing training are facing increasing pressure (Bonoli and Emmenegger, 2022). With structural transformations of the labor market (through occupational upskilling (Oesch and Menés Rodríguez, 2010), digitalization and routinization of labor (Autor 2010)), coupled with the costs associated with training (e.g., costs for vocational instructors, time and administration, equipment, etc.). In combination the overall shift of preferences towards general education among the young population, firms are facing difficulties to fill their vacancies and, in the long term, secure their skill needs (Baetghe and Wolter, 2015; CEDEFOP 2023; Graf, 2018). Germany has seen a decline in firm engagement in vocational training over the recent years (Thelen, 2014; Busemeyer and Thelen, 2012; Graf, 2018), and in Austria the state has taken over large shares of the training task from firms due to the costliness of high-skilled technical training (Seitzl and Unterweger, 2022; Durazzi and Geyer, 2019). Thus, declining collectivism, labor market premia for general, higher, education brought on by technological change and occupational upskilling, along with shifting preferences towards general education among young school-leavers, challenge firms' involvement as providers of training on a broad scale (Baethge and Wolter, 2015; Jacob and Solga, 2015; Graf, 2018; Haasler, 2020; Bonoli and Emmenegger, 2022).

While institutional, political economy accounts are useful for explaining large systemic changes, they sometimes fall short of explanations regarding micro-level actors' behavior. In the case of dual VET, they focus on streams of segmentalism on the institutional and industrial level (Seitzl and Emmenegger 2020, Thelen and Busemeyer 2012; Di Maio et al. 2020) or on organizational size as well as the strength-relationships and negotiations between organized interest groups as determinants for firm involvement (Emmenegger et al. 2020; Trampusch 2010; Aerne and Trampusch 2022; Culpepper 2007, 2011). Despite their—undisputed and significant—theoretical and empirical value, the perspective of the individual firm is often lacking.

In contrast, labor market economists more often address aspects on the micro-level, e.g., firms and organizations (Açemoglu and Pischke, 1998, 1999; Wolter et al., 2006; Schweri and Mueller, 2007).

This scholarship on firms as training-providers show that economic considerations are important for their involvement as training hosts for apprentices: it needs to be profitable to train (Culpepper, 2007; Açemoglu and Pischke, 1999; Wolter et al., 2006). Either already during the training period, if the apprentice's productivity and low labor costs exceed the expenses of training, or later when the firm can hire the trained apprentice as a skilled worker in the firm (Culpepper, 2007; Wettstein et al. 2017, p. 213, Wenzelmann et al. 2017; Wolter et al., 2006; Wolter and Schweri, 2002; Muehlemann and Wolter, 2020). The lion-share of economic studies of firms' motivation to train compare non-training firms to training firms (Wolter and Schweri, 2002; Wolter et al., 2006; Mohrenweiser and Backes-Gellner, 2010; Dionisius et al., 2009; Wenzelmann et al., 2017; Aepli et al., 2024; Neirrotti and Paolucci, 2013). What we know less about are the considerations that training firms, *already involved* as providers of collective goods, undergo, given their various situations in the apprenticeship market.

Given the rise of academization of work and advancements in technology (Murphy and Oesch, 2018; Deissinger, 2019; Thelen, 2020), firms' survival increasingly hinges on their ability to adopt new technologies (Hassel and Palier, 2020). These developments in turn imply a higher demand for high levels of academic knowledge and cognitive skills (Açemoglu and Autor, 2011; Eggenberger et al., 2020) and many governments have responded by emphasizing the importance of higher education and upskilling the population (Durazzi, 2023; Durazzi and Benassi, 2020; Oesch, 2013). Hence, firms nested in sectors undergoing technological advancement and that provide high-skilled training programs may increasingly need workers with a general education to satisfy their skill needs (SKBF, 2023; Diessinger, 2019; Iversen and Soskice, 2001). Due to this process, training firms with high skill needs are likely to experience strains within the system and therefore may be inclined to pursue skill supply approaches instead of in-firm training (see Iversen and Soskice, 2001; Schweri and Mueller, 2007; Seitzl and Unterweger, 2022).

In contrast, training firms nested in sectors at the bottom of the skill spectrum are seeking workers that are more likely to be subject to replacement (Autor et al., 2003). The routinization of labor and the replacement of humans with technology (Férrnandez-Marcías and Hurley, 2017), for example, cashiers at supermarkets or manual work in many crafts professions, reduces the need for workers. Hence, firms in low-skilled sectors exposed to automation and routinization of labor may rather invest in new technology than train apprentices (Oesch, 2013; Owen and Johnston, 2017). Although professional associations, particularly in Switzerland, have shown high adaptability and commitment

to the collective governance and sustenance of dual VET also in low-skilled sectors (Bürgi et al., 2022; Graf et al., 2021), firms faced with alternatives to in-firm training will be more susceptible to pursue skill other supply strategies: especially in the face of hardships attracting and retaining new learners (see Carstensen and Ibsen, 2021).

In mid-skilled occupations, some job functions may become automated or upskilled, while many remain rather unaffected (Diessner et al., 2022). Compared to the high- and low-skilled sectors, the requirements for the workforce have remained relatively stable, although streams of deindustrialization and offshoring have reduced the employment shares (Oesch and Ménes-Rodríguez, 2011; Culpepper and Thelen, 2008; Iversen and Soskice, 2019; Hassel and Palier, 2020). The manual, mid-skilled jobs remaining, are neither readily replaced by automation or un-skilled workers nor require higher academic degrees as sectors in knowledge sectors (Wren, 2020). Therefore, abandoning training provision in favor of other skill supply approaches may be difficult, given the already existing shortage of skilled workers in these sectors (Holzer, 2015) and the (often) net-benefit nature of the training (Wolter et al., 2006). However, given the reported difficulties attracting suitable learners in these occupations (CEDEFOP, 2023), firms may consider exiting training due to these difficulties (Kemmerling and Trampusch, 2021) but without a ready alternative on how to sustain their skill supply.

This literature review suggests important gaps in our knowledge about firms' considerations and motivations to continue or desist training provision. The political economy and skill formation literatures inform us about the importance of cooperation between key actors involved in VET to resolve issues of free-riding and poaching through collective action (Soskice, 1994; Açemoglu and Pischke, 1998; Crouch, 2005). However, for motivating individual firms to *continue* to provide a collective good (education and training), the importance of membership in intermediate professional associations is largely unknown. Furthermore, given the various skill needs in different sectors and occupations, some of which have significantly altered with the rise of the knowledge economy, our knowledge of firms' motivation to continue providing training or consider exit across various occupations remains missing. We do not know the extent to which hiring difficulties can be tolerated for different firms, or when they make firms more likely to consider exit. Finally, whereas on the one hand, the literature is unequivocal on the importance of the economic benefits of investing in training for firms, we do not know to what extent different training strategies (relying on

short-term or long-term benefits) renders already training-providing firms more likely to consider exiting the dual VET system.

In our aim to close this research gap, we focus on Switzerland. Switzerland is an example of a collective skill formation system (CSFS)¹ (Emmenegger et al., 2023; Busemeyer and Trampusch, 2012). As a CSFS, Switzerland is comparable Germany, Austria, the Netherlands, Denmark, and more recently also in countries like Norway, France, and Italy, where dual training gains more and more ground (CEDEFOP 2020; Bosch and Charest, 2010). In contrast to other CSFSs, and in likeness to firms in liberal skill formation systems, however, Swiss firms face exceptionally low constraints in entering or exiting training providers (Trampusch and Mach, 2011; Wettstein et al., 2017; Walther, 2006; Katzenstein, 1985). Whereas in Denmark and South Korea, all or many employers contribute to a common training fund through a training levy (Bosch and Charest, 2010; Nelson, 2012; Durazzi, 2023), and in Denmark and Germany there are strong collective bargain agreements between unions and employers' associations regulating apprentice wages (Nelson, 2012; Emmenegger et al., 2019) and union representatives involved in the multi-level governance structures of VET (Emmenegger et al., 2022; Carstensen et al., 2024). Swiss firms' participation in dual VET is high (Busemeyer and Trampusch, 2012; KOF, 2024) and faces no economic incentives (such as subsidies) and low institutional constraints (such as membership in economic chambers, installation of works councils with union representatives on the firm-level) (Emmenegger et al., 2019). Swiss apprentices earn salaries that are not subject to collective bargaining and differ between sectors and firms (Ryan et al., 2011). The training firms' involvement is voluntary and not subsidized, granting the firms a high level of discretion regarding their decision to train or not (Busemeyer and Trampusch, 2012). Vocational training provided by firms extends to cover ca. 250 of occupations in 38 broader vocational fields (SBFI 2024). This makes Switzerland and Swiss firms an excellent case for studying considerations to exit or not to exit the dual VET system, as no punishments or rewards may moderate their involvement.

¹ Switzerland has a VET enrolment among the cohorts leaving mandatory school of about 60 percent, and the VET students typically spend four days in a firm and one day in school per week (SKBF 2023). Like in other countries where dual VET is prominent, the bulk of training firms in Switzerland are small and medium-sized firms (SMEs), but politically it has been dominated by large, export-oriented firms (Katzenstein 1985; Mach and Bonoli 2000; Culpepper 2003, 2007; Emmenegger and Seitzl 2020).

In the next section, we develop hypotheses in dialogue with Hirschman's EVL theory to closer understand what factors motivates firms to consider exit, or non-exit, from the dual vocational education and training system as providers of training, using Switzerland as an example of a CFSF with a liberal (apprenticeship) market for training firms to operate in (Emmenegger and Seitzl 2020).

3. Exit, voice, and loyalty and firms' exit considerations

Hirschman's Exit, Voice and Loyalty model posits that individuals within an organization (organized social structure), be it a firm, nation, or any human association, have three primary options when they perceive a decline in the organization's quality (1970). They can opt to 'exit' (i.e., sever ties with their organization), or they can utilize their 'voice' (i.e. seek to address concerns and enhance the relationship through communication (Hirschman 1970). 'Loyalty' among members is a moderator of the outcome 'voice' or 'exit' in face of dissatisfaction, where 'a member with a considerable attachment to a product or organization will often search for ways to make himself influential, especially when the organization moves in what he believes is the wrong direction' (Hirschman, 1970: 77–78).

The EVL theory has later been broadly applied in various disciplines and studies (John, 2017; Dowding et al., 2003; Hoffman, 2006; Karadja and Prawitz, 2017; Freeman and Medoff, 1984). In the extent to which organizations and firms have been studied, the focus has predominantly been on these actors as consumers or customers of a product (Hirschman, 1970; Foreman-Peck, 1981), firms as employers whose behavior have implications for their employees (Doellgast, 2022) or as small-n case studies (see Doellgast, 2022; Angle and Perry, 1986). Our study focuses on firms as collective actors in the dual vocational education and training system, as providers of a public good (education) whose participation is voluntary and entails both costs and benefits (Busemeyer and Trampusch, 2012; Culpepper, 2003; Schweri and Mueller, 2007).

Following Hirschman (1970), members of a system or an organization are likely to become invested in the system's or organization's success when they believe their 'voice' will be heard which can lead to improvements (see Hoffman, 2006; Dowding et al., 2003). Thus, having channels for voice at their disposal and using them lead to lower chances of exits (Hirschman, 1970; Dowding et al.,

2003). Furthermore, those individuals/firms that have readily available options instead of staying in a situation they are dissatisfied with (e.g., other job opportunities, other labor sources, locations, contracts) may be more likely to exit, but also less likely to use ‘voice’ and vice versa (Hoffman, 2006; Ross, 1998). In Hirschman’s words, exit possibilities ‘atrophy the development of the art of voice’ (Hirschman 1970: 43; cf. Hirschman 1986: 90). Recent critiques of Hirschman suggest a distinction between the private and the collective voice, where the latter is defined “actions where the intention of the individual in acting is to contribute to the desired effect through that action” (Dowding et al., 2003: 473). This stands in contrast to individual voice as “actions where the intention of the individual in acting is *to bring about* the desired effect *solely through that action*” [authors’ italics]. The latter shares the closest resemblance with firms organized together in intermediate professional associations, as in the case of firms providing training. Furthermore, as pointed out by Dowding et al. (2003), voice must not be considered as binary but rather a scale, where more voice options, channels, or indeed use of voice should reduce exit (Dowding et al., 2003). In turn, more intense (use of) voice can also be driven by stronger loyalty, and previous experiences of successful voice can in turn strengthen loyalty (see Dowding et al., 2003: 474).

Loyalty is the most elusive and criticized of the components in EVL (Doellgast, 2022; Dowding et al., 2003; Barry, 1974). Later elaborations of EVL by Dowding et al. (2003) attempt to separate members’ loyalty from the object they may consider exiting or using voice to improve upon dissatisfaction, “by examining one’s commitment to it in terms of past investment which may include past voice activities” (p. 491). Thus, loyalty can be enforced via considerable investments to the system. Adding to the contributions of Hoffman (2006), loyalty indeed increases the likelihood for cooperative members in an industry to use voice, and loyalty as ‘solidarity’ and inclusive practices encouraging voice on the workplace limit the use of exit in employment relations (Doellgast, 2022).

In this study, we do not juxtapose ‘exit’ and ‘voice’ as two mutually exclusive choices moderated by loyalty (Hirschman, 1970). Instead, we follow Dowding et al. (2003) in positing that exit or non-exit is influenced by both ‘voice’ and ‘loyalty’ separately, and that these factors in combination further lowers the inclination to exit considerations by firms as providers of education and training. We understand ‘loyalty’ as a moderator of firms’ inclination to weather potential dissatisfaction with the system and not to (consider) exit (Hirschman 1970). ‘Voice’ comprises firms’ engagement with professional associations representing the occupational or sectoral interests on a political level,

through which they have the *possibility* to use ‘voice’ to express dissatisfaction, concerns, or suggestions for improvement regarding their role as training providers rather than exiting directly (Freeman and Medoff, 1984; Miller and Mulvey, 1991). Due to the rather blurred lines between loyalty and voice, and the limitations to establish a time-sensitive narrative of the use of voice in face of dissatisfaction (given our use of cross-sectional quantitative data), we may use interactions between the two variables to test whether they in combination bring about a lower likelihood of exit considerations compared to their possible effects in isolation.

In the following sections, we discuss the factors that may impact firms’ considerations to stay on or to exit the system as training providers in dialogue with EVL accounts.

3.1 Hiring difficulties

Hiring difficulties pose strains on any firm’s skill acquisition (Aeppli et al., 2024 and can in the case of firms providing training be a source of dissatisfaction with the dual VET system. The reasons can be manifold. Firms offering high-skill training look for candidates with strong academic profiles to avoid drop-outs as well as economic losses for the firm. Thus, firms offering demanding VET programs should have higher requirements than less demanding ones and therefore have a smaller pool of applicants to choose from, *ceteris paribus* (Baethge and Wolter 2015; Holzer 1998; Rivera 2011; Castilla et al. 2013; Wilson 2022). For such firms, changes on the supply side (e.g., smaller cohort, loss of interest in the occupation, increased interest in general education track) can result in great difficulties filling the vacancies (IAB 2022; gfs.bern 2021).

Firms offering training in occupations that require lower skill levels and/or that qualify the graduates to low- or mid-skilled occupations may also experience hiring difficulties. Recent reports show a loss of interest in certain manually heavy occupations and/or occupations that are losing their attractiveness to younger generations (CEDEFOP, 2023). Stagnating salary levels on the regular labor market, though working conditions, poor career advancement outlook, and low prestige are factors that taken together render hiring new apprentices difficult in certain low- and mid-skilled occupations (Murphy, 2014).

In reference to Hirschman (1970), hiring difficulties—as one important source of dissatisfaction with dual VET—could prompt a response from firms to consider exiting dual VET (and seeking

alternative skill supply options to VET) or to weather the difficulties using voice and the loyalty to the system. We hypothesize that firms that experience hiring difficulties are more likely to consider exiting training-provision (H1).

3.2 Participation in organizations of the working world

The matter of firms' affiliations and relations to intermediary associations and other firms is a topic that is well covered in the institutional literature as well as in works on industrial relations.

Membership in intermediary associations, representing sectoral or occupational interests, often benefits firms in several ways. For instance, it can provide access to exclusive information, or facilitate the exchange of information with other experts in the field, and it may provide a channel for influence in the branch on a political level, etc. (Schmitter and Streeck, 1999; Streeck, 2009; Strebel et al., 2020; Emmenegger and Seitzl, 2019). For members that offer training, the affiliated association actively encourages firms to continue to train, to participate in exchange with other firms as well as political actors, and to keep the vocational trainers up to date (Strebel et al., 2020; Busemeyer and Trampusch, 2012; Culpepper, 2003).

Firms that are members of intermediary associations representing employers may also benefit from a range of support measures that directly or indirectly might help skill matching in their hiring activities. Inter-firm exchanges between members, attending job fairs and events organized by employer associations that bring together employers and apprentice candidates are activities that firms might benefit from (Culpepper, 2003; Busemeyer and Trampusch, 2012; Strebel et al., 2020).

The cooperation among and between intermediary associations, the state, and the regions (cantons), is a central feature also of Swiss VET governance. A common organizational form is the intermediary associations that comprise both employers' and employees' interests, the "organizations of the working world" (Oda) (Wettstein et al., 2017). Through memberships in Oda, tasked among other things with updating the VET curricula for the different occupations, and participation in its activities, firms have a strong say in the form and content of the dual training within their occupational fields, and their demands and challenges are likely to be heard on a political level (Strebel et al., 2020; Graf et al., 2021).

However, without a direct measurement of ‘voice’ for firms in OdA, Olson’s seminal work on “The Logic of Collective Action” (1965) and selective incentives for members of collective organizations, such as employer associations (pp. 52-53) is informative. Olson argues that the joint activities provided for members in such associations, such as inter-firm exchanges, networking, information-sharing and other resources exclusively available for members, helps overcoming collective action problems within the (sometimes diverse) group of members (Olson, 1965). Similarly, Schmitter and Streeck argue that it is in the interest of intermediary associations to cater to the collective of members (and not just the large or well-endowed ones) due to their purpose to coordinate collectively towards broader and common goals (1999).

Referring to these works (Hirschman, 1970; Olson, 1965; Schmitter and Streeck, 1999), we view membership in OdA as a channel for ‘collective voice’ for firms, where active and more intense participation in member-activities or use of resources resolve collective action problems within the association and strengthen the collective through selective incentives towards its broader purpose (i.e. sustaining firm-provision of training). Thus, we expect that ‘voice’ through participation in OdA relates to a lower likelihood to consider exiting VET for training firms (H2).

3.3 Strategic orientation of training firms in dual VET

To understand firms’ motivation to provide training or consider exiting from the dual VET system as training-providers, we, lastly, draw on previous scholarship on cost-benefit considerations as motivations to train for firms, and its relation to the strategic orientation of the training theory (see Wolter et al., 2006; Wolter and Schweri, 2002; Mohrenweiser and Backes-Gellner, 2010; Dionisius et al., 2009; Wenzelmann et al., 2017).

Studies of firms’ training costs in VET in Switzerland (Wolter and Schweri, 2002) and Germany (Mohrenweiser and Backes-Gellner, 2010) bring to the fore cross-country differences in dominant training strategies. Specifically, in Germany few firms’ training generates a net benefit during the training period (i.e. a production-oriented strategy), whereas the remaining follow an investment-oriented strategy, where the net costs of the training are expected to be recouped after the training is completed, when firms can hire their in-house trained apprentices as skilled workers (Mohrenweiser and Backes-Gellner, 2010). In Switzerland, the opposite tendency prevails (Wolter and Schweri, 2002). Thus, firms on average shoulder higher training costs in Germany than in Switzerland, due to

the absence of labour market regulations and CLAs for apprentice wages (Wolter et al., 2006) and most Swiss firms have training strategies that hinge on the generation of net benefits early in the training (Dionisius et al, 2008). Since around one third of the sampled Swiss training firms face net costs at the end of the training they are “obliged to retain at least some of the apprentices to recoup the uncovered costs” (Wolter et al., 2006, p. 253).

For these firms, we must assume that the costs and efforts set aside to offer training might weigh heavier as a reason to train. With changing skill demands and motivation to train for firms (Neirotti and Paolucchi 2013; Pfeifer et al. 2019; Mohrenweiser and Backes-Gellner 2009), the extent to which firms train primarily to satisfy future skill needs, or to cater to current skill needs (e.g., training apprentices instead of hiring unskilled workers), plausibly has a bearing on their tendency to retain apprentice graduates after they have finished their training. Drawing a parallel to Meyer and Allen’s concept ‘continuance commitment’ to an organization, stating that commitment (i.e. loyalty) would be higher to a system if there is an economic benefit from continuing, exit is reduced (1997).

Hence, we posit that firms that seek to retain apprentice graduates, i.e. are retention-oriented, and have a longer-term commitment to dual VET, are less likely to consider exiting (H3) compared to firms that mainly train to satisfy immediate skill needs. We use firms’ retention-orientation vis-à-vis their apprentices as a proxy for ‘loyalty’ to the dual VET system in the EVL model (Hirschman 1970; Meyer and Allen, 1997). We posit that loyalty in itself may associate with lower exit considerations: especially in interaction with ‘voice’ through participation in O&A-activities.

In the following, we present the data and methods used in this study.

4. Methods

4.1 Survey and data

We independently collected the contact details of 10’632 Swiss training firms advertising apprenticeship positions at the open recruitment platform berufsberatung.ch (orientation.ch) between January 2021 and October 2022. In total, we covered firms and organizations in 34 out of

38 vocational fields (SBFI, 2023)². The project was preregistered at OFS and was waived by the UNISG ethical committee. We reached out to all firms via email at the end of November 2022 with an invitation to participate in the survey addressed to employees who were involved with the recruitment of apprentices in the firm. We explained that survey aimed to understand the training firms' role and situation in dual VET, and their strategies to solve skill shortage issues. After two reminders 2'738 firms had participated in the survey. After removing cases with missing values on the variables included in our analysis, a working sample of 1'772 firms remained, which represents ca. 16% of the total number of firms contacted³, which is comparable to other large-N employer studies (Liechti et al., 2017).

The individuals that agreed to participated were presented with an online survey, asking questions about the respondents and the firms, the firms' skill provision strategies, their challenges, and considerations regarding VET, and about their affiliation with organizations of the working world⁴. Compared to the firms that did not respond to the survey, we had a slightly higher participation of firms located in German-speaking cantons, and a slightly lower participation of firms from French-speaking cantons. Participation from Italian-speaking cantons was about the same as in the non-participation group (see table A11 in the appendix).

Across sectors, we observe an overall high participation of firms in Construction and Machines and metal industry, compared to its overall popularity among VET programs by number of apprenticeships (SBFI, 2022). For Healthcare and social work, Secretary and office work, Retail, Electricity and energy, Hospitality, and Architecture and urban planning, our sample was more in line with the real offer of apprenticeships (SBFI, 2022, see table A12 in the appendix).

Compared to the non-participants, firms in Electricity and energy were half as likely to participate, whereas firms and organizations in Healthcare and social work were twice as likely to participate. Of the remaining vocational fields, the representation in our sample was similar to those who chose not

² Due to the proximity of some vocational branches, we combined Databases, network design and administration; Software and application development; and Computer use to ICT, and Interdisciplinary programs and qualifications with health and social care; Nursing and midwifery; Medical diagnostics and treatment technology; Pharmacy; and Social work and counseling to Health and social work.

³ Descriptive statistics over the distribution of the responses to the main items used in this paper is available in Table A2 in the appendix.

⁴ Survey protocol available in tables A13a and A13b, in the appendix.

to participate was more similar (see Figure A1 in the appendix). However, regarding external validity of the results, it is possible that we in general *underestimate* the tendency to consider exiting VET, given the strong VET-orientation of the survey and the call for firms' insights on how VET can be improved.

4.2 Estimation strategy and variables

We use linear logistic regression models and calculate average marginal effects of the predictor variables on the outcome (consideration to exit dual VET), following Hosmer and Lemeshow (2013).

We used the survey item “Is this establishment considering to not continue offering apprenticeship positions (i.e. opting out of dual VET altogether) in the foreseeable future?” as the dependent variable. We coded the responses into a binary variable “No” as 0 (reference category) and “Yes” as 1, after removing the “Don't know” answers.

We ran post-estimation models for multicollinearity between the predictor variables, calculating Variance Inflation Factors (VIF) (Kohler and Kreuter, 2012), without detecting any multicollinearity⁵.

To explore the effect of ‘voice’ on considerations to remain the dual VET system, or ‘exiting’, we use three main predictor variables: the difficulties firms face to hire apprentices (as a proxy for dissatisfaction with the system, a scope condition for exit considerations in Hirschman (1970); the intensity of participation in Oda activities and use of resources (as a proxy for ‘voice’); the strategic orientation of the training (to train mostly for short-term reasons or to train with the purpose to retain the apprentices upon graduation), as a proxy for ‘loyalty’, see Muehleemann and Wolter, 2020; Mohrenweiser and Backes-Gellner, 2008; Wolter and Schweri, 2002); and the academic requirements in the vocational fields provided by the training firms in the sample. A detailed description of the operationalization of these variables from our firm survey is presented in table A1 in the appendix.

⁵ See Tables A9 and A10 in the appendix.

We used control variables for the firms' selectivity when hiring apprentices (i.e. if they tend to leave a position vacant if they cannot find a suitable candidate (=1) or anyway fill the position with a candidate that did not quite live up to their requirements (=0); firm size (1-9, 10-24, 50-249, or more than 250 employees), the language spoken by the firm representatives in the sample (French/Italian=0, German=1).

5. Results

Overall, around 13 percent of the firms are considering opting out of dual VET (Table 1). The exit-minded firms are in strong minority, which testifies to the strong overall commitment to remaining in dual VET for the firms in our sample. However, if we were to generalize these results to the full population of ca. 60'000 training firms in Switzerland (Aeppli et al., 2024), it would mean that almost 8'000 Swiss firms are at the verge of leaving the dual VET system, which would have a significant impact on the collective system if put to action. Given the potential 'positive' bias of training firms participating in this survey, who might already have a stronger commitment to dual VET and their role as training firms, as previously discussed, these numbers could even be conservative. It is therefore pertinent to look closer at the factors that associate with these considerations.

Table 1. Sample distribution of exit considerations

	Freq.	Percent
Does not consider exiting dual VET	1,548	87.36
Considers exiting dual VET	224	12.64
Total	1,772	100

From our first analysis of the average marginal effects of the predicted variables on the outcome "Consider exiting from dual VET", we find that having difficulties hiring new apprentices has a substantial and positive effect (Figure 1a) (full model available in table A4 in the appendix). We evaluated the model's predictive performance using the ROC and AUC and found that the model has a fair predictive performance (0.7433) (see Figure A3 in the appendix).

Regarding the effect of 'voice', captured by the intensity of the participation in OdaA-provided activities (and use of OdaA-resources), we find that firms that are participating in three or more OdaA

activities are less likely to consider exit. The effect of being member but not participating in any OdA activity is surprisingly significant, but due to the smaller number of observations in this group the confidence interval is quite large (see table A4 in the appendix), and we caution against drawing strong conclusions regarding this result. However, the tendency is that all firms that are being member of OdA (i.e. do not belong to the reference category “Not member”) have negative coefficients, whereas the effect of participating in many OdA-activities is significant and quite substantial. Comparing OdA-members with non-members, in Figure 1b, we find that the effect of being an OdA-member (regardless of the intensity of the participation in activities) is negative and quite substantive.

We also find that firms that have a retention-oriented training strategy, captured by the tendency to offer graduated apprentices a work contract once the training is completed, has a small but significant effect and the coefficient is negative. There is thus a tendency for retention-oriented firms to be less likely to consider exiting from dual VET, although the effect size is modest.

Considering the three skill-levels (low, medium and high) of the vocational fields in which the firms in our sample are providing vocational training, none of the effects is significant and they center around zero. Thus, the main type of training (by academic requirements) provided by the firms does not seem to render any group of firms more likely to consider exiting.

Figure 1a. Marginal effects of predictor variables on exit considerations (non-OdA members / members by participation in OdA activities)

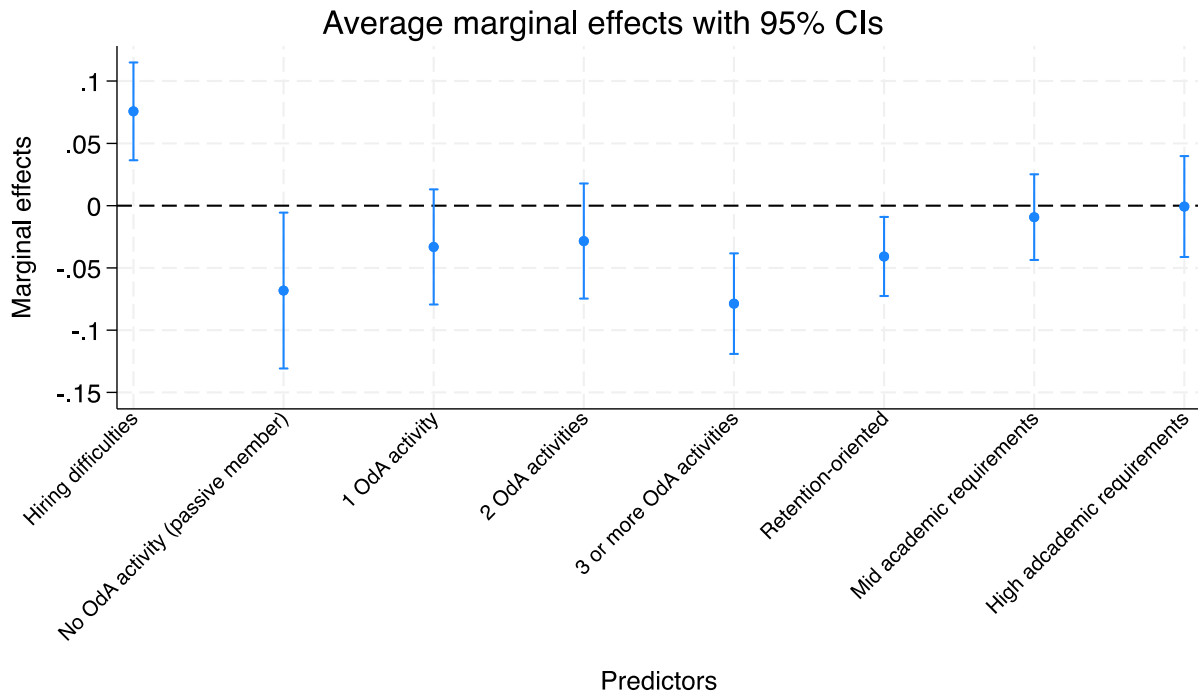
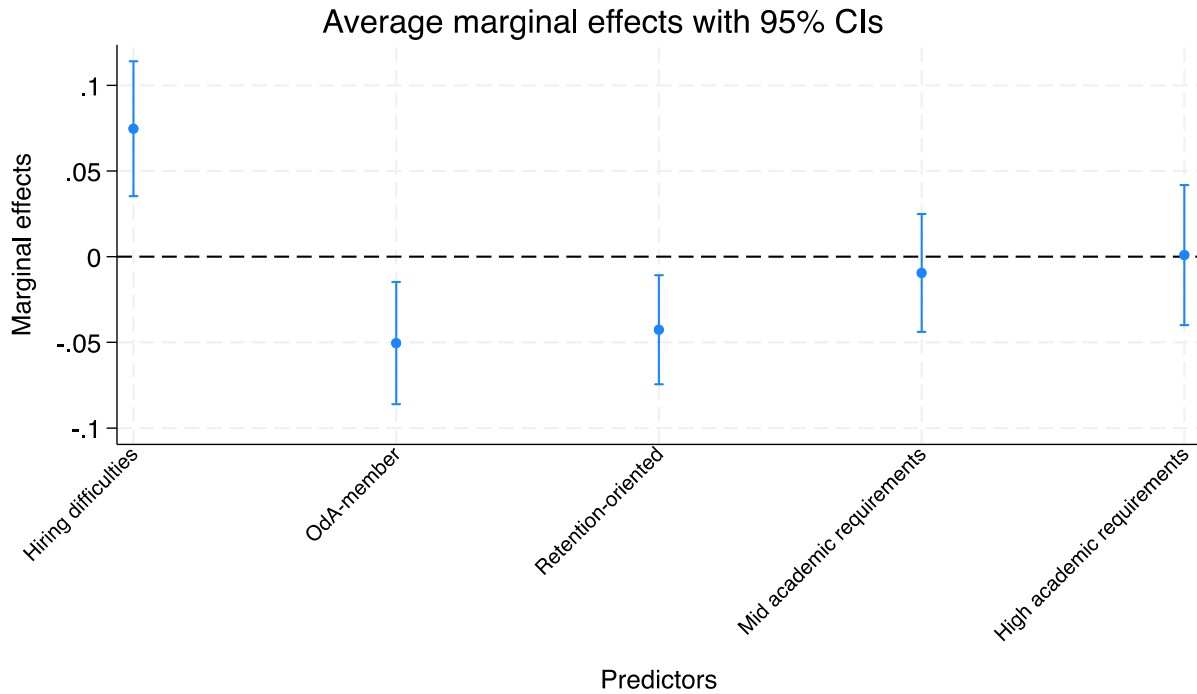


Figure 1b. Marginal effects of predictor variables on exit considerations (Non-OdA-members / OdA-members)



Although the reasons to consider leaving a system can be multifold (Hirschman, 1970; Doellgast, 2020), we assumed that one important factor would be hiring difficulties of apprentices in this case. We find that hiring difficulties indeed is strongly associated with exit considerations (Figure 1). To nuance the importance of ‘voice’ and ‘loyalty’ for the firms in this study, we split the sample in two: one group containing only the firms that had not reported any hiring difficulties (n=554), and one group that had reported hiring difficulties (n=1’218) over the past 12 months.

A look at the distribution of exit considerations among the sub-groups ‘hiring is not difficult’ and ‘hiring is difficult’ shows that the former group is less than half as likely to consider exiting than the latter (Table 2). A chi2 test confirms the statistical difference of the answer distribution between the two groups.

Table 2. Distribution of exit considerations given hiring difficulties

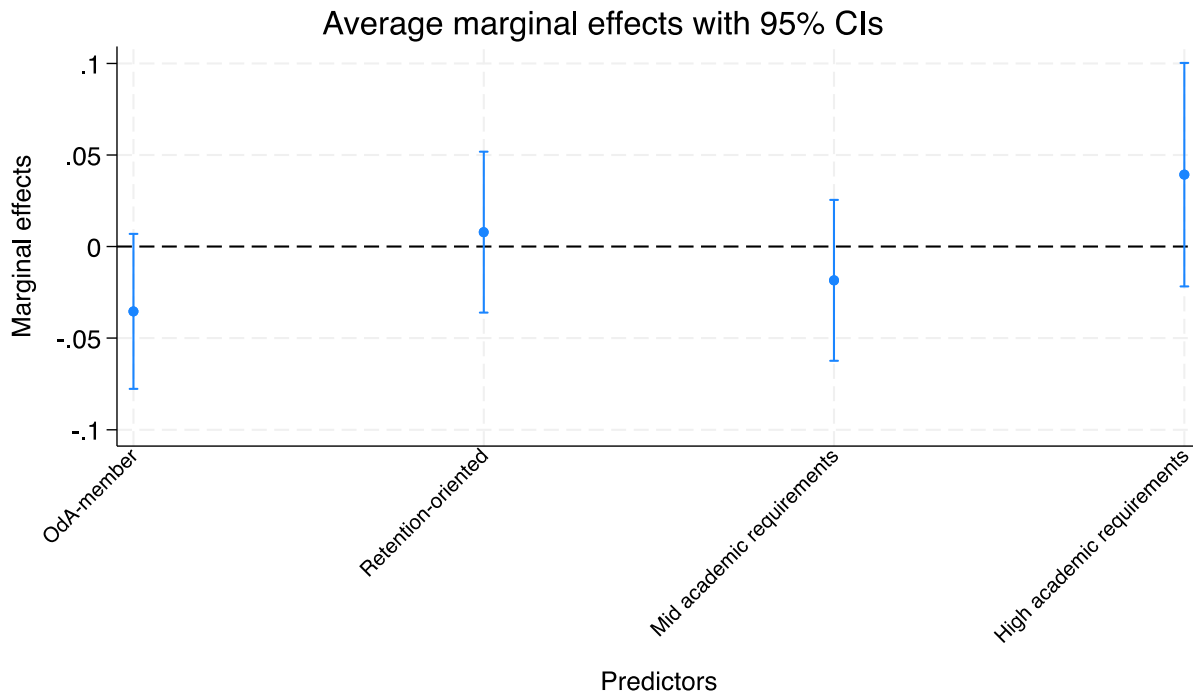
Considers exit out of VET	Hiring difficulties		Total
	No	Yes	
No	517	1031	1548
Yes	37	181	224
Total	554	1218	1772

Pearson $\chi^2(1) = 25.9462$ Pr = 0.000

We estimated the average marginal effects of the predictor variables for the group where hiring was not difficult. Due to the smaller samples, we did not have enough observations in the ordinal scale OdA-activity variable to reliably test the effect on the outcome. We therefore used a binary variable instead of the scale variable, where “not OdA-member” was the reference category (=0) and the “OdA-member” in the other category (=1).

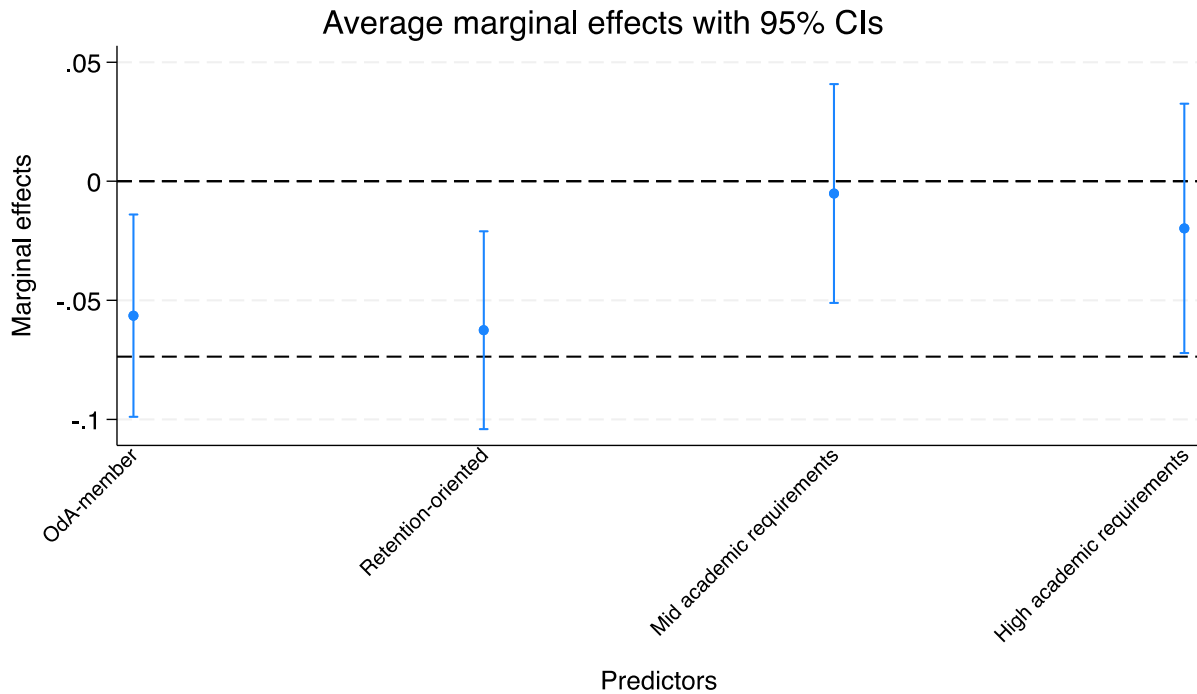
We find that for the group where hiring was not difficult, neither being an OdA-member, and thus having a channel for ‘voice’, nor having a retention-oriented training strategy influenced exit considerations (Figure 2) (full model in table A5 in the appendix). Thus, in the absence of such challenges for the firms involved in training, neither having a ‘voice’ channel nor employing a retention-oriented strategy (‘loyalty’) significantly curb the (much less frequent) exit considerations.

Figure 2. Marginal effects of predictor variables (Sub-group: hiring is *not* difficult)



In the sub-group “Hiring is difficult”, where around 15 percent of the firms consider exiting, we find that both being an OdA-member and having a retention-oriented training strategy associate with a lower likelihood to consider an exit from dual VET (Figure 3) (full model table A5 in the appendix). The effect sizes are about equal for both predictor variables. This shows that for the sub-group for which one important factor for exit considerations is in place (hiring difficulties), the importance of the ‘voice’ channel becomes visible, along with the longer term, retention-oriented strategy (‘loyalty’) for the involvement in VET as training providers. The effects of the academic requirements are not significant in any of the two sub-groups.

Figure 3. Marginal effects of predictor variables (Sub-group: hiring is difficult)



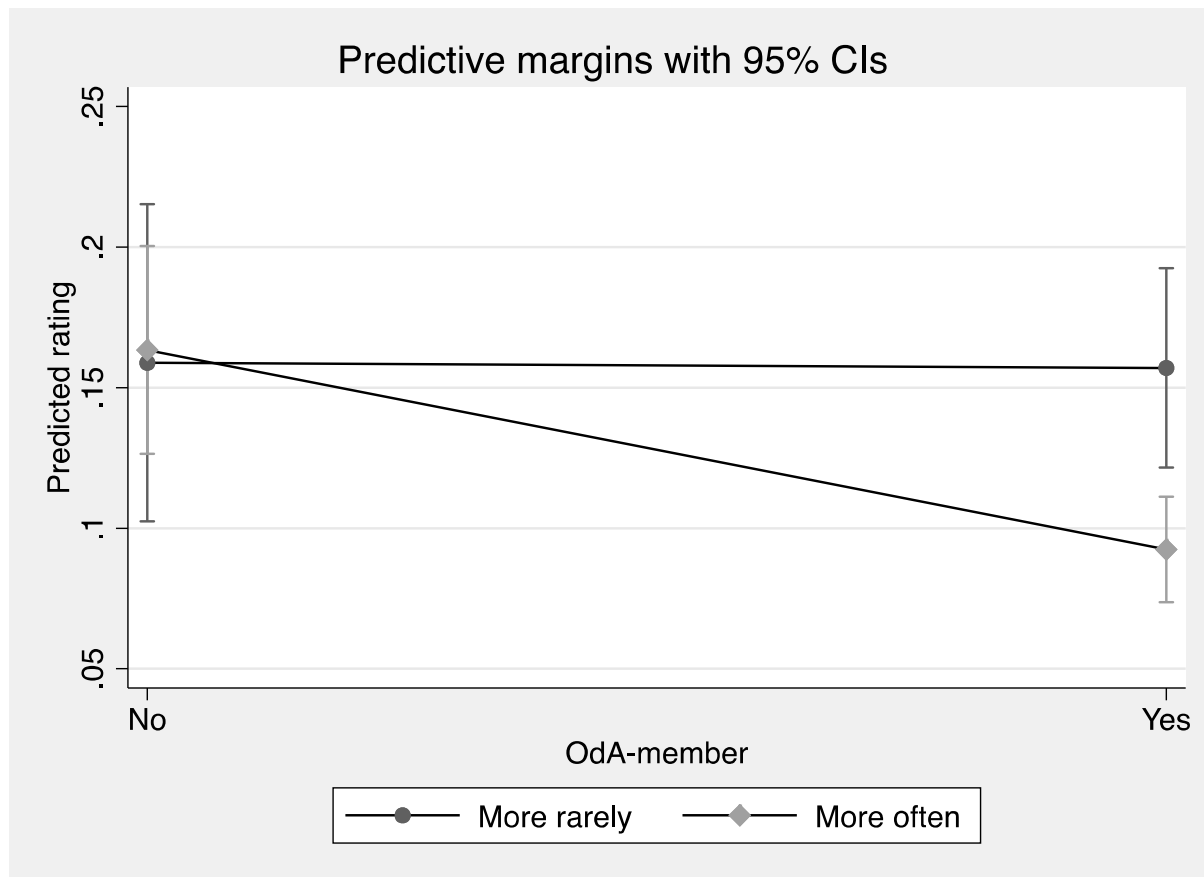
Thereby, all three hypotheses are supported in the full sample analysis, but H2 and H3 are not supported when we consider firms that do not experience hiring difficulties.

Hirschman’s EVL theory stipulates that different levels of ‘loyalty’ may influence the use of ‘voice’, and vice versa (Hoffman, 2006). We thereby interacted the variables OdA-member and Retention-

orientation to find if the effect of both having and using voice channels and being more loyal through a long-term strategic use of VET is amplified.

Figure 4 below shows the average marginal effects of the interaction of these two variables in focus. We find that OdA-members *with* a retention-oriented training strategy are less likely to consider exit, compared to the effect of each of the variables in isolation, *ceteris paribus*. The interaction term is significant at $p < 0.05$ and the coefficient is quite substantial (-0.692), which is almost as large as the effect of experiencing hiring difficulties (0.738) in the opposite direction (see table A8 in the appendix). Hence, we find that the combination of firms having voice channels and longer-term commitment to VET counteracts the positive effect of experiencing hiring difficulties on considerations to exit VET as training providers.

Figure 4. Interaction effect of OdA-member*Retention-oriented firms on predicted outcome “Considers exit from dual VET”



We have so far looked at the factors influencing firms' exit considerations. To conclude our analysis, we will also consider the answers to the question we asked firms that had indicated exit considerations: "If you would stop providing vocational training altogether, what approach(es) would you use instead to secure the skill supply in this establishment?"

Table 3 summarizes the answers to this question. Each respondent could indicate several alternative skill supply approaches aside from dual VET, but the most frequently cited alternative skill supply approaches were "hire skilled workers" (ca. 60%) and "Hire apprentice graduated from other training firms" (ca. 47%).

These two popular alternatives point to inherent and to some extent intertwined threats to collectively organized training systems: non-training firms "free-riding" from other firms training apprentices beyond their own skill needs (Oswald-Egg and Renold, 2016) and non-training firms directly hiring other firms' graduates that they *may* have intended to keep (i.e. 'poaching') (Mohrenweiser et al., 2018).

Table 3. Alternative skill supply approaches for firms that consider exit dual VET

Alternative skill supply approach(es)* (n=226)	Freq.	Percent
Hire skilled experienced workers	135	59.73
Hire apprentice graduates from other training firms	106	46.9
Hire workers from related fields and retrain them	94	41.59
Offer continued training to employees	57	25.22
Hire graduates from full-time VET schools	49	21.68
Outsource tasks to external firms	43	19.03
Invest in innovation (R&D) to become less dependent on skilled workers	32	14.16
Hire graduates from (technical) universities	22	9.73

* Multiple responses possible

6. Discussion

Our findings show that merely 12.6 percent of the firms in our sample do consider exiting dual VET (Table 1). Thus, although difficulties recruiting apprentices are present among more than two thirds of the firms, across sectors, only a small share of them consider exiting. In the following, we discuss our findings in relation to the hypotheses posed in the theory sections.

H1: Firms that experience hiring difficulties are more likely to consider exiting VET than firms that do not experience hiring difficulties.

Our conceptualization of ‘dissatisfaction’ with the system captured in this study, outlined by Hirschman as a central cause of exit (1970), indeed showed a strong relationship with exit considerations from the dual VET system. Whereas only around seven percent of the firms without hiring difficulties were inclined to consider exiting, around 15 percent of the firms with hiring difficulties considered exiting. However, the overall effect of hiring difficulties was visible in our estimation of the average marginal effects on the outcome. Although showing causality of the effects on the outcome is beyond the scope of this paper, our data shows a strong relationship between this predictor variable and the outcome.

H2: Firms that are (active) members of OdA are less likely to consider exiting dual VET compared to passive (and non-) members.

The centrality of OdA and their role in organizing dual VET, updating the curriculum and even creating vocational training programs for ‘new’ occupations (Di Maio et al., 2020)), is undisputed in Switzerland (Graf et al., 2021; Wettstein et al., 2017; Bürgi et al., 2022). Many OdA have existed for a long time and are well-entrenched as a political actor in the politically salient field of dual VET (Gonon and Maurer, 2012). Despite this, their function as a channel and arena for exchanging ideas and voicing concerns in view of exit considerations as actors in VET, has hitherto been uninvestigated.

Our study shows an association of being a member of an organization of the working world and to remain in the dual VET system. Further, more fine-grained, analysis of the intensity of the participation in activities and use of resources provided by these organizations to members shows that firms that are intensively involved are significantly less likely to consider exiting dual VET compared to more passive, or non-, members (Olson, 1965). These findings corroborate those of Doellgast (2022), showing that in organizations where ‘voice’ is encouraged among workers, employment relations are strengthened and solidarity between employers and employees is solidified.

Previous work on the role of such intermediary associations in dual VET, has shown their important role in fostering commitment to the system among training firms in newer occupations, providing a dynamic channel for influence and political activity supporting training in important VET occupations such as healthcare and social work (Trampusch, 2010; Strebel et al., 2020; Graf et al., 2021). Our findings underscore this importance, for firms across the range of occupations and of various skill-levels and point to the further significance of organizing also micro-firms (more likely to consider exiting than small- and medium sized firms) and providing a channel of influence along with resources that could strengthen their role as training-providers in Switzerland.

H3: Firms that are retention-oriented are less likely to consider exiting VET than firms that are not retention-oriented.

For the retention-oriented firms, which we consider a proxy for ‘loyalty’, the long-term commitment to recover potential costs of dual training appears to galvanize the firms' commitment to VET, notwithstanding OdA-membership or participation (i.e., voice) (see Sverke and Hellgren, 2002 for similar findings for union members' lesser use of voice when commitment to and investment in the organization is strong). However, for firms without hiring difficulties, having a retention-oriented training strategy had no significant effect.

Interestingly, the retention-oriented firms in our sample appear not to be limited to only high-skilled knowledge occupations (Wolter et al., 2006) but also to mid-skilled types of occupations where the skills and workers needed in these occupations still strongly lean on non-routinised, skilled work (Durazzi, 2023; Wren, 2020). In the latter group, alternative skill supply approaches may extend to hiring foreign workers (Trampusch, 2020), but the work is currently not replaceable with either

technology or requires tertiary degrees. For the former group, that are likely to also source skilled work from higher educated individuals with general education (Baethge and Wolter, 2015; Graf, 2016), are as likely or unlikely as firms providing mid-skilled or low-skilled occupations to consider exit if the training strategy of the firm is predominantly retention-oriented. Thus, considerations to remain in VET are strong across skill-levels, despite alternative skill supply options for high-skill (through recruitment of high educated workers (see Autor et al., 2003; Acemoglu and Autor, 2010) and low-skill occupations (exposed to routinization of work and automation risking replacing low-skilled workers (see Oesch, 2013)). Conversely, where firms are training out of production-oriented strategic reasons (Mohrenweiser and Backes-Gellner, 2008; Wolter and Schweri, 2002), and rarely offer employment to apprentice graduates (Wolter et al., 2006), the prospect of exiting dual VET and replacing the internal training with other skill supply strategies (such as ‘free-riding’ or ‘poaching’) may be more attractive when the hiring situation is difficult (see Hoffman, 2006). Our split sample analysis shows this tendency, where the retention-oriented strategy significantly decreases the likelihood of consider exit when hiring is difficult, but has no significant negative effect when hiring is easy (Figures 2 and 3).

For retention-oriented firms, it is plausible that the long-term investment-orientation of the training strategy and collectively organized occupational and sectoral associations have fostered loyalty among concerned firms (Hirschman, 1970; Schmitter and Streeck, 1999), which helps them tolerate the challenges of attracting suitable candidates for the VET programs. This insight lends support for Hirschman (1970) but also Schmitter and Streeck’s model of ‘logic of membership’ and ‘logic of influence’ (1999), where ‘loyalty’ to the system either leads to continued involvement or silent exits.

Our findings also align with Açemoglu and Pischke (1998) and Muehleemann and Wolter (2020) and Muehleemann et al. (2010) studies of Germany and the link between work councils, hiring costs and an investment-orientated strategies of firms. Regarding OdAs as a functional equivalent for unions for training firms in Switzerland, where the role of regular unions is diminutive (Emmenegger et al., 2019; Emmenegger et al., 2020), we can assume, based on our findings, that like the German economic chambers, the OdAs have the function of encouraging strong investment in VET. Although it is beyond the scope of our study to account for firms’ hiring costs, the strategic orientation of firms regarding their use of apprentices after the training is completed in combination with OdA-participation indicates similar patterns in Switzerland as its northwestern neighbor.

Firms that opt for exiting dual VET necessarily need to re-think their skill supply provision. Hiring apprentice graduates from other firms that the latter intend to keep (i.e., poaching) could undermine the trust necessary for cooperation between private actors and the mutual benefits of firms of various sizes and capacities to train (Streeck, 1985; Busemeyer and Trampusch, 2012). This is true in at least two ways: firms that poach instead of provide training is causing a ‘free-rider problem’ which could weaken and destabilize the foundations of dual VET (Busemeyer and Trampusch 2012; Bonoli and Emmenegger 2022). It also increases the pressure on remaining training firms, risk creating a shortage of training positions and weaken the prestige and popularity of the vocational track in general. Second, the alternative strategy to hire skilled workers only works in practice if there are enough skilled workers in the existing labor market (Aepli and Kuhn, 2024; Culpepper, 2003). If the interest is low in training certain occupations from the supply-side, (small) firms with limited resources and relatively low attractiveness for applicants (Culpepper, 2007; Bethke-Langenegger et al., 2011) may find themselves between a rock and a hard place within or potentially outside their roles as training providers.

7. Conclusion

This study has looked at the considerations that training firms in Switzerland have regarding their future in VET: *what factors affects firms’ considerations to exit from, or stay loyal to, upon dissatisfaction in the dual VET system?* Drawing on Hirschman’s EVL framework (1970), complemented with insights from Olson (1965) and Schmitter and Streeck (1999) we argue that ‘voice’, especially in combination with a retention-oriented training strategy (‘loyalty’), may overcome severe sectoral as well as firm-level difficulties and reduce the inclination of leaving the dual VET system. Our novel cross-sectoral firm survey, covering 1’772 firms, offers insights into training firms’ non-exit or exit considerations in VET, in the face of hiring difficulties.

We find that although only a limited share of surveyed training firms consider exit, there are important factors that influence firms in both directions. In specific, we find hiring difficulties is a strong factor influencing exit considerations. However, (active) membership in organizations of the working world has an overall negative effect on exit considerations. This tendency is exacerbated when considering only firms that are experiencing hiring difficulties. The same relationship is true

for retention-oriented firms, that tend to offer employment to their apprentices once graduated: such firms are significantly less likely to consider exit. We also find an interaction effect between these two factors: firms that are members of OdA and that are retention-oriented are significantly less likely to consider exiting dual VET as training-providers.

These findings lend support to Hirschman's tenet (1970) that actors exercising their voice are in a better position to influence the system to their advantage (see also Olson, 1965; Schmitter and Streeck, 1999). But also, that the long-term strategic orientation of the training-providing firms, seeking to retain their apprentices upon graduation, associated with an investment-oriented training strategy (Wolter et al., 2006) and active membership and participation (and the possibility for use of 'voice') in organizations of the working world and their resources and activities (Hoffman, 2006) foster commitment to the dual VET system and limits exit considerations.

Although there are weaknesses in the systems, a lion share of firms is *not* planning to leave the dual VET in the foreseeable future. Many rely on VET for future skill supply and are (active) OdA members, which improves their position in VET and ties them closer to it. This insight is a testimony to the strength of the cooperation undergirding the dual vocational system in Switzerland: even in newer VET sectors (see Graf et al., 2021; Strebel et al., 2020) as well as in high-skilled fields (Wolter et al., 2006). These occupational and sectoral interest associations will likely continue to play a role in keeping the system vital.

6.1 Limitations and future research

Some caveats in this study should be noted. While we believe that the intensity of firms' participation in OdA-based activities and use of its resources is a suitable proxy for voice, we do not have data on the extent to which firms *actually* voice their problems to the OdA in which they are members. Neither were we able to obtain information on which OdA, and on what level (peak-level, national or regional, broader sectoral or more narrow occupational interests, etc. (see Graf et al., 2021)). Knowing the extent to which firms do voice concerns, and if they feel their grievances are heard and addressed, would have added weight to our conclusions. Further studies on firms' relationship with intermediary associations could shed light on which specific use of voice generates stronger commitment among members.

Another limitation is the single-country focus. Although we would argue that studying firms' exit considerations in Switzerland where the enrolment in dual VET is high, like the involvement of firms, we omit the possibility of comparing the importance of voice and loyalty for similar sectors in countries with different industrial relations configurations, various importance of social partners (e.g. in Switzerland the influence of unions in VET is low, see Gonon and Maurer, 2012) and cost-benefit considerations of firms (e.g. in Germany, firms more often take on net costs during the apprentice period (see Mohrenweiser and Backes-Gellner, 2010)).

Using cross-sectional data from one point in time, our study does not lend itself for claiming causality between factors. Aside from showing statistical relationship between the variables available through our data, we cannot ascertain whether there are other, unobserved, factors that determines exit or non-exit considerations. Furthermore, given that participation in Oda is voluntary and comes with a certain cost for members, membership is not randomly distributed across firms, which brings about further endogeneity considerations. For instance, it is possible that a firm that has a long tradition of training apprentices (with either retention- or non-retention intentions) becomes member of an Oda out of pre-existing 'loyalty' to the VET system. However, showing the difference between more and less active members of Oda hints to the presence of, at least, feedback effects of Oda-membership and participation as a channel for voice, and non-exit. Neither can we be sure of the exact reasons why certain firms choose to have a retention-oriented training strategy: some firms overtrain and therefore offer standard employment only to a few, which might not in this case be a sign of lower commitment to their role as training providers as such. Limiting the scope of this paper to the statistical relationships between some central factors that plausibly affect exit and non-exit considerations in dual VET while controlling for other important factors such as skill-level averages in the vocational fields, firm size, and language regions, we have shown these relationships to be quite robust.

Lastly, our study has focused on firms that are currently training apprentices: asking about the intention to stay in or exit VET, admittedly, entails uncertainty about the de facto future actions of firms. An avenue for future research could be longitudinal studies of firms who have at some point trained apprentices, and either have opted out or stayed committed. Even more forceful would a

cross-country comparison be, contrasting dual VET countries and their training firms' considerations and behavior, given various traditions, industrial relations, and possibilities for voice.

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