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# The attractiveness of Indian Polytechnics graduates—An analysis from the (demand-side) perspective of companies and colleges

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## Abstract

The paper examines the attractiveness of graduates from Indian Polytechnics (PTs). The attractiveness is examined from the perspective of actors who have a demand for the graduates, namely companies and engineering colleges. To understand the reasons for their assessment of attractiveness, this study uses the concept of institutional logics (ILs) to unveil the inherent reasons behind the stakeholders' perception of attractiveness. To understand the stakeholders' ILs, interviews were undertaken in nine companies and 10 colleges in Mumbai and Delhi. The findings make clear that the companies' and colleges' assessments of the attractiveness of PT graduates are very different, reflecting their own ILs. Companies assess the attractiveness as limited due to the lack of employability of PT graduates. In contrast, colleges view graduates far more positively, as the weaknesses described by companies have less of an impact on them.

## INTRODUCTION

In India with its 1.39 billion inhabitants, an enormous workforce is available (UNESCO, 2020). Every year about 15 million people enter the job market, while at the same time many companies look for sufficiently qualified employees, who are needed because of the high

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growth rate of the economy (International Labour Organization [ILO], 2016). However, employers cannot unconditionally rely on the potential of the young generation to satisfy their demand. Paradoxically, companies cannot fill their vacancies as many applicants do not have the skills they need (Agrawal & Agrawal, 2017; Majumdar, 2016; Rao et al., 2014). These so-called mismatches are due to the fact that the Indian education system fails to provide its graduates with specific qualifications, which results in their lack of employability. The phenomenon of mismatch can be observed in the academic and vocational education and training (VET) sectors alike (Khare, 2018; Sathiya et al., 2015; Sinha et al., 2019).

Several studies have highlighted the negative correlation between the unsatisfactory outcome and attractiveness of education systems. As educational institutions only partly fulfill the expectations of the various actors and stakeholders regarding their ability to develop employability, this can cause their reputation and attractiveness to decrease or be subject to debate (Leney & Green, 2005). This applies both to those demanding qualified employees as well as to students considering further education. In India, research findings on attractiveness are available for Higher Education as well as the VET sector, especially for the Industrial Training Institutes (ITIs) (Agarwal, 2006; Ajithkumar & Pilz, 2019; Jambo & Pilz, 2018; Ratnata, 2013, p. 137ff). ITIs offer vocational training in various trades. Students who have completed class 8 of school education, are entitled to enrol for vocational training courses in ITIs (Wessels & Pilz, 2018).

But in contrast to ITIs and academic education little is known about Polytechnical Colleges (PTs), especially about their degree of attractiveness, although they are the second most important sector after the ITIs within the VET system (British Council, 2016). While ITI courses are designed to provide basic knowledge and to get graduates on the labour market fast, the PTs offer much more complex and theory-based courses that qualify graduates for supervisory jobs.

India's education system is—roughly speaking—structured as follows: Primary and secondary education is compulsory for children aged 6–16 (years 1–10). Students taking the exam after year 10 (10th pass) are entitled to doing grades 11 and 12 or enrolling at vocational schools like Polytechnics (PTs). Those taking the 10 + 2 exam (12th pass) can pursue higher (or tertiary) education studies at universities or (engineering) colleges and graduate after further 4 years. Students having successfully finished their 3-year education at a PT can also enter higher education at engineering colleges as so-called lateral entrants, being exempted from doing the first year there (10 + 3 + 3 path). Engineering colleges can either be independent colleges and those affiliated to universities. Technically, engineering colleges do not fall within the ambit of the UGC (University Grants Commission) but the AICTE (All India Council for Technical Education), which is responsible for university education (Wessels & Pilz, 2018). In the future the Higher Education Council of India (HECI) will serve as the single regulator for higher education, as proposed in the National Education Plan (NEP) 2020. All regulatory bodies, including AICTE and UGC will be merged into HECI, which then will act as a single overarching umbrella body (MHRD, 2020).

There are 3,440 PTs with more than 1.5 million students enrolled (MHRD Ministry of Human Resource Development, 2019; Schneider & Pilz, 2019). Technically, PTs belong to the postsecondary sector and offer a wide range of training programmes, with the engineering courses (like civil, electrical or computer engineering) being the most popular ones. Admission to the PTs requires the completion of the tenth grade, for certain programmes the completion even of the 12th grade is required. In addition to the most sought-after engineering courses, there are a number of other courses, for example, in management, agriculture or arts. Most

courses last 3 years and graduates receive a diploma. Graduates from the engineering course are therefore often called ‘diploma engineers’. The courses offered by PTs are based on theoretical training supplemented with practical elements so that graduates are often employed as shop floor supervisors, as they have acquired both theory and practice-based expertise (MHRD Ministry of Human Resource Development, 2019; Schneider & Pilz, 2019; Wessels & Pilz, 2018).<sup>1</sup>

Attractiveness of VET institutions (e.g., ITIs) from the point of view of students and their parents have been studied before (Ajithkumar & Pilz, 2019). However, what remains a research question is, whether stakeholders of PTs who associate quality mainly with the degree of output and outcome view PTs as attractive, and the reasons for their perception. The recruiters of graduates have a decisive impact on how the attractiveness of a particular educational institution type is generally perceived (Pilz & Ramasamy, 2022). PT graduates either find employment in the general labour market or seek further education at engineering colleges, whose importance has been increasing as an alternative to finding immediate employment (Schneider & Pilz, 2019). Engineering colleges, along with companies, as the main demanders of PT graduates, are key actors in the way the attractiveness of PTs is established. Hence, this paper focuses on the criteria they use to form their assessments. The topic of attractiveness of educational institutions is being widely discussed in education policy in India and has been a longstanding debate. The Indian government has tried to improve the vocational training system in terms of quality and quantity since the first Skill Development Policy in 2009. However, these attempts have failed so far for several reasons. Lack of attractiveness of the VET system has been identified as one of them (Pilz & Regel, 2021). As a result, increasing the attractiveness of the VET sector is one of the main goals of the National Education Policy (NEP) of the Ministry of Human Resource Development (MHRD),<sup>2</sup> therefore a scientific examination of the attractiveness and the factors which constitute it is necessary (MHRD, 2020).

The paper presents findings from a survey with interviews of experts of nine companies and 10 colleges in Mumbai and Delhi. In the second section the conceptual framework for the paper including the various stakeholders’ understanding of attractiveness and the idea of institutional logics (ILs) will be described. The methodology for the research is outlined in the third section (methodology) and findings concerning the attractiveness of PTs are presented in the fourth section (results). The results are evaluated in the context of the attractiveness discourse in India (discussion), while the last section (conclusion) provides concluding remarks. The paper argues that the two stakeholder groups (engineering colleges and companies) have significantly divergent views on the attractiveness of PT graduates which strongly result from their different ILs.

## ATTRACTIVENESS AND ILS

As mentioned above, the controversy about the attractiveness of vocational education plays an important role in policymaking and is being intensely debated on an international scale (cf. among others Billett, 2020; Lasonen & Gordon, 2009; UNESCO-UNEVOC, 2018; Winch, 2013).

<sup>1</sup>For a detailed portrait of PTs cf. Schneider and Pilz (2019) and Wessels and Pilz (2018). <https://www.bibb.de/veroeffentlichungen/de/publication/download/9574c>

<sup>2</sup>The name of the Ministry of Human Resource Development (MHRD) was changed to Ministry of Education (MoE) in August 2020 (MHRD, 2020).

The perception of attractiveness influences companies' and students' decisions whether or to what degree they are prepared to get involved in the VET system. To increase the attractiveness of vocational education it needs to be thoroughly analysed with regard to the different stakeholders, individuals, companies or the general public. Although the topic is hotly debated, there is no standardized terminology so that the terms 'attractiveness', 'standing', 'image', 'parity of esteem', and so forth are being used simultaneously (UNESCO-UNEVOC & BIBB, 2014).

Researchers tend to agree that attractiveness is a multidimensional construct, which may be perceived differently by different stakeholders (cf. among others Billett, 2020). Therefore, in this study the concept of attractiveness will be approached via the individual stakeholders' views and opinions. Based on their model of analysing attractiveness, Ajithkumar and Pilz (2019) have examined the perspectives of the most decisive groups (individuals, education institutions, state and society).

This study builds on previous research about Vocational Training Institutes in India (Ajithkumar & Pilz, 2019; Pilz & Ramasamy, 2022) and focuses on actors, namely companies and colleges that judge PTs by their output, that is the capacity of PT graduates. This comprehensive insight is necessary as attractiveness is defined as a multi-perspective construct which is constituted through all the various actors' perspectives. The perception of different actors can have a significant effect on the evaluation of attractiveness, especially as the different stakeholders' assessments influence each other (Billett, 2020). The (positive and negative) perception of the different actors then influences society's view and the state's willingness to get involved.

The attractiveness of PTs perceived by stakeholders' correlates with corresponding logics which influence and form their assessment. The model developed by Ajithkumar and Pilz (2019) defines terms and categories of attractiveness for different perspectives and attributes them to the various stakeholders. However, it does not provide an analysis of why stakeholders associate their perception of attractiveness with the VET system and its subunits (in this case PTs). But a one-dimensional examination of attractiveness without an analysis of the actors' reasons and needs is not sufficient for this research strategy. Therefore, the above-mentioned model will be extended to investigate whether actors perceive their educational institution as attractive and reveal the logics of their assessment. Thus, the interdependence between attractiveness and logics becomes transparent.

To analyse and empirically examine these logics and their effects, the concept of ILs, which is considered to be the theoretical basis of neo-institutionalism, was used. Friedland and Alford (1991) claim that behind every activity of an individual or organisation there is a central logic like cognitive schemes, routines or scripts which causes the activity and legitimizes it. By describing the ILs, which show a specific effect in certain contexts like colleges and companies, patterns of identity, actions and strategies among actors can be identified (Thornton et al., 2012). By correlating institutions, actors and activities, ILs are suited to unveil the inherent logics behind the stakeholders' perception of attractiveness.

With reference to Friedland and Alford (1991) Thornton et al. have defined seven ideal-typical categories of institutions: 'corporation', 'society', 'market', 'state', 'profession', 'religion' and 'family' (Thornton et al., 2012, p. 52ff). According to ILs institutions act to secure their legitimation and resources resulting from it to guarantee their existence (Meyer & Rowan, 1977). It should be noted that several logics can occur within an organisation, which can complement or modify or even oppose each other (Zoellner, 2020). Besides, ILs are not

fixed but can change in the course of time. So ILs influence the actors' personal perception of the attractiveness of PT graduates.

The companies discussed in this paper generally base their activities on a market logic, that is they strive to maximize their activity and minimize the costs. This logic influences the companies' procedure regarding recruiting of workforce and therefore their perception of the attractiveness of graduates of certain educational institutions. To secure their competitiveness, companies need employees who are qualified and fit to work in different fields and display a great deal of competences and knowledge. To achieve satisfactory sales returns, their goods and services need to meet a certain quality standard (Wiemann & Pilz, 2020). If PTs can offer graduates who are highly qualified and can be employed in different fields, their attractiveness rises in the companies' view. Quantity is also an important factor, hence companies try to recruit a sufficient number of employees with the qualifications needed to run their specific operational processes to avoid a qualitative mismatch (Pillay & Ninan, 2014, p. 21). Equally important is the aim to bind the specifically qualified personnel to the company as long as possible, especially if there is a high demand for them among competing enterprises due to their low number (Khare, 2016). Naturally, loyal employees are an important factor for fulfilling the companies' economic targets. Pursuing a cost-benefit policy according to a market logic, companies try to minimize costs in general and wage costs in particular without risking a negative effect on productivity. In terms of that market logic, demand for relatively cheap labour is high (Agrawal & Agrawal, 2017).

To summarize, one can note that companies legitimize themselves by following the rules of the market and striving to realize profit, observing the cost-benefit-maxim. Because of these principles companies are especially interested in staff that can offer a high educational standard, have a good wage-productivity-ratio, show high organisational loyalty and are available on the labour market in sufficient numbers—factors which constitute their attractiveness in the VET sector.

Most PT graduates are taken on by companies and colleges with the latter acting according to their own ILs, of which governmental requirements (state logic) are the most important ones. The state logic aims at increasing prosperity of the citizens and keeping the regulations which are to help fulfil this aim. Providing adequate education is one means to achieve this goal, and educational institutions do that by enrolling and educating students including guaranteeing transition and permeability. Students having a PT diploma, for example, are entitled to continuing their academic studies at a college (so-called 10 + 3 + 3 system), a fact which increases the attractiveness of PTs. The common standard route to college in India is through completion of general secondary education and higher secondary education, which can then be completed within 4 years (10 + 2 + 4). But colleges in India also follow the logic of the market. They try to perform as well as possible in the different rankings to increase their own attractiveness. As one ranking factor among others is the students' performance, colleges try hard to attract high-achievers (Tilak, 2016), which then leads to a higher attractiveness. Additionally, excellent rankings and certification of educational schemes of colleges enable them to extend their autonomy rights and allow them to act more independently (e.g., in setting up their curricula), which is desirable in the logic of the market (Sancheti & Pillai, 2020). Good rankings also positively affect the race for students, who are an important resource in the highly competitive education sector (Tilak, 2016). Another aspect when it comes to recruiting new students is a high placement rate with companies, which is important for students choosing an appropriate college (Raya et al., 2015).

Competing for students is based on market- or resource-oriented logics. In India tuition fees are common practice, with the number of students correlating with the colleges' revenues. And colleges get financial support from the state for every student enrolled to maintain the teaching infrastructure (Carnoy et al., 2014). At least publicly funded and aided educational institutions receive this kind of financial support from the government, while private institutions are not eligible for state funding. Because of the validity of the formula that a high number of students generates more financial resources one could expect colleges to take on as many students as possible (including PT graduates), with the quality of teaching becoming less important. This would have negative consequences for PT graduates concerning their future employability. This exclusively market-oriented logic would however be balanced by the above-mentioned factors like ranking, placement rates and state regulations. Colleges in India pursue both the specific logics of the state and of the market to legitimize their activities and secure their future existence. These are the reasons why they attach great importance to performance and flexibility when admitting students, and make sure that they fulfil state regulations like permeability.

The logics described are eminently important how demanders view attractiveness. However, some other factors which have not been elaborated here like logics in the field of religion and profession can play a role as well, especially as ILs can complement and influence each other. By describing the actor-oriented ILs the model of Ajithkumar and Pilz (2019) could be significantly extended as the ILs of the receiving side have been worked out within the Indian context. Thus, the interdependence between the factors ILs and attractiveness will be highlighted.

## METHODOLOGY

To establish how demanders of PT graduates view their attractiveness experts of nine companies and 10 engineering colleges were interviewed in Delhi and Mumbai in March 2019. The focus of the interviews was on engineering (like civil, electrical, mechanical or computer engineering) since this branch is the most important and most popular at PTs. Other less essential courses offered at PTs, such as Arts, Design or Business were not considered in this study. On the employers' side companies were selected which recruit PT graduates in the field of engineering. These enterprises represent different sectors like automobile and civil or electrical engineering and have all a long experience in employing PT graduates. Another characteristic is that all companies except one have a workforce of more than 500 employees. Due to their large number, there is a correspondingly high diversity of educational qualifications, which enables them to classify and evaluate the qualities of PTs graduates against the background of employees with other qualifications. The colleges interviewed represent the three different institutions (governmental, private and private-governmental-funded)<sup>3</sup> and offer courses which can be directly chosen by PT graduates and which are compatible with their diploma (Wessels & Pilz, 2018). The interviews with both target groups were conducted in Mumbai and Delhi and their surrounding areas as these cities are the most important urban centres in India and therefore have a sufficient number of colleges and

<sup>3</sup>The sample contains governmental as well as private and private-governmental PTs. Due to their different ownership structures, they follow different logics, for instance regarding realising profit, which is more distinct in private organisations (Tilak, 2018). Because of legal regulations in India (Shah, 2015) the methods of realising profit are limited and have to fulfil certain conditions. Therefore, all three types of PTs are regarded as an entity.



companies. Consequently, the findings cannot unconditionally be transferred to rural areas. The sample was put together with the help of local partners from educational institutions in Mumbai and Delhi, who were able to initiate contact with the interview partners. Due to specifically local difficulties finding adequate interview partners, a random-sampling-method could not be used so that they were addressed through a snowball system. The interviews were taped and carried out face-to-face in English apart from one which was conducted via telephone. All interviewees had been informed about the background of the research work and assured that confidentiality and data protection were guaranteed. In the companies, the interviewees were all in senior roles, either managing directors or HR managers, while at colleges, the interviews were conducted with members of the management or senior teachers experienced in the procedure of admitting PT graduates. In cross-cultural research projects the problem of social desirability can occur. This potential bias was counteracted as much as possible by choosing interview partners who did not have a direct connection to PTs and by using an indirect questioning technique (Johnson & van de Vijver, 2002). The interviews were conducted by using semi-structured, theory-based interview guidelines (Kuckartz, 2014). The interview guideline had been developed on the basis of the theoretical concepts described above (Attractiveness, IL). The questions covered the stakeholders' motives to recruit or admit PT graduates and their views of the attractiveness of PTs. The transcription of the audio files was done with the help of the software 'f4transkript' to produce a verbatim manuscript by using basic transcription rules (Dresing et al., 2015). For two interviews where the Indian partners declined to have the conversation recorded detailed manuscripts produced from memory are available. The evaluation of the manuscripts was done with the software 'MaxQDA' and the qualitative text analysis according to Kuckartz (2014). The main categories were determined on the basis of the theories regarding the discussion about attractiveness and later complemented after inductively analysing the material. Then these categories were tested and modified if necessary. Due to the exploratory nature of the study and an open and therefore less standardized form of data presentation was chosen (Lueger & Hoffmeyer-Zlotnik, 1994; Maxwell, 1996). The following part presents the central findings from the interviews.

## **RESULTS: ATTRACTIVENESS OF PTS FROM THE PERSPECTIVE OF COMPANIES AND COLLEGES**

The categories correspond with the ILs, which are described in the second section (Attractiveness and Institutional Logics). It has become clear that companies and colleges use different logics for their activities so that they need to be presented separately. The factors determining the companies' perception of attractiveness on the basis of market logic are explained first. The following sections (Colleges' perspective) then deal with the attractiveness factors relevant for colleges.

### **Companies' perspective**

#### **Quality of training**

For companies the quality of training is a decisive aspect concerning the attractiveness of a specific educational institution. That is why several items have been addressed with regard to



this topic. They refer to the discrepancy between the qualifications required and the de facto output provided by PTs:

‘So there is a big mismatch of what is being taught and what is actually required’.  
(Interviewee C4)

Companies expect their future employees to have specific qualifications and skills, which are based on market logic because well-trained staff is necessary to successfully put goods and services in the market. The PT graduates, especially those from the field of engineering, are expected to have a wide range of skills, for instance excellent skills on the machines and processes used on the shop floor. Furthermore, problem solving and communicative competences are needed as PT graduates are primarily employed on the shop floor and in supervision, where they are faced with manifold social interaction. Companies, however, complain about a qualitative mismatch on different levels, which affects the employees’ employability:

‘...if you are asking me as an employer, as an industry, how are they industry ready, I like to say their industry readiness is not much [there] sadly’. (Interviewee C6)

Companies address graduates’ qualitative deficits both on the technical and the communicative level and point out the necessity to set up training and induction course to compensate for them:

‘The amount of education they train at PT is not much industry ready and therefore, that is the problem, so we as industry have to work a lot to make them industry ready’. (Interviewee C6)

These measures are organized by the companies themselves and therefore put a strain on their resources:

‘So that is my investment, you know cost investment, the time investment and everything, the guy gets ready in six months’. (Interviewee C5)

### *Effect on attractiveness*

Due to market logic companies depend on well-trained labour force and therefore expect PTs to graduate their students with similarly high qualifications. If graduates do not meet the companies’ expectations, the particular educational institution is rated as not attractive. Especially a lack of communication skills and outdated knowledge are frequent reasons for diminishing the attractiveness of PTs. Then employers do not see in them a suitable chance of finding qualified staff and turn to other ways of recruiting. As in India a high number of degree engineers is available, usually those having a higher qualification take over the tasks of PT graduates and demand a higher salary, which corresponds with their university degree (Choudhury, 2016). If PT graduates are employed, they usually belong to the class toppers, and yet even they need to be trained in terms of work readiness to meet the employer’s business needs. Due to the market logic which requires minimising wage costs unskilled workers instead of PT graduates have increasingly been hired, which, however, has affected the quality of

products and services. In India the poor quality of the VET sector is a recurring topic (Regel et al., 2022). The opinion poll among entrepreneurs and colleges has shown that these deficits are not only seen with regard to the ITI but also to the PTs and their graduates. (cf. also Pilz & Regel, 2021).

## Company loyalty

Company representatives have emphasized the importance of their staff's loyalty to the employer, which therefore affects their view of attractiveness of PT graduates:

'I will say relatively diploma holders once they are recruited they will not switch jobs'. (Interviewee C6)

Because of the difficulties for Indian entrepreneurs to recruit qualified workforce the length of their staying with the company is important, especially if the company has invested resources into training and induction programmes. But what is also relevant in this respect is the comparison with graduates from other institutions, mainly with degree holders:

'They loyalty compared to the degree holders is relatively higher, I can say that'. (Interviewee C6)

Company representatives believe the mainly modest socioeconomic background of their staff is decisive for their higher degree of loyalty because they are forced to work hard to support their families—a factor which is of high relevance especially in India:

'They are loyal because they have a humble background. They need a job and therefor they need to perform'. (Interviewee C6)

Yet, many PT graduates are inclined to move on to a new job when they have received a better wage offer. Another motive for leaving is the general tendency to acquire higher education, for example by obtaining a college degree if the economic conditions are met:

'And after PT they want to [...] go for degree. [But] only those parents that can afford the degree education post PT'. (Interviewee C6)

### *Effect on attractiveness*

According the market logic loyal employees who stay longer with a company are an asset for it, which is especially true for a labour market like the Indian with its high competition for qualified workers. Therefore, poaching is widespread (Kumar et al., 2015; Pillay & Ninan, 2014; Pilz, 2017).

A PT diploma has only indirect influence on staff's loyalty towards their future employer. As PT students tend to come from middle-class families or have a modest socioeconomic background (Schneider & Pilz, 2019), they usually depend on the wage from their job and are therefore considered to be more loyal than degree engineers, for example, who more frequently change their jobs. But the tendency to acquire higher qualifications is beginning to weaken job

loyalty and shorten the length of stay with a company. Many graduates see PTs as a stepping stone on their way to college, especially as their diploma guarantees them direct access to the second year at college. Many PT students choose this path either immediately after graduation or after having gained some work experience, unless family or financial reasons do not allow them to realize their ambitions.

## Adequate remuneration and productivity

Due to market logic monetary factors are of great importance to entrepreneurs and therefore affect the attractiveness of PTs and their graduates. Employers compare applicants on the basis of different qualification criteria:

‘[...] the salaries are not as high as that of [degree] engineers’. (Interviewee C8)

Often diploma engineers and degree engineers are compared, with the first-mentioned getting a significantly smaller salary because of their low-value degree. Furthermore, payment is not seen isolated but linked with productivity:

‘The ration of turnaround will be a little lesser and they will work well, with less salary. In comparison to the degree engineers’. (Interviewee C9)

Another factor is the applicants’ qualification profile:

‘Why did I prefer a diploma [graduate]? As I said I wanted somebody with a skill, again together with the package’. (Interviewee C5)

### *Effect on attractiveness*

In accordance with the logic of the market, labour costs must be adequate in relation to employees’ performance to make them attractive for companies. Diploma engineers are usually employed on the shop floor as supervisor and their status within the company’s salary structure and job hierarchy is located above unskilled workers and ITI graduates but below degree graduates. Because of the large reservoir of workers entering the labour market in India, companies are in a comfortable position with regard to wage costs (Kumar et al., 2019). And they can easily recruit unskilled workers, who have low salary expectations, and offer them a training on the job to meet the firm’s special requirements (see above). (International Labour Organization [ILO], 2016, p. 205ff) For PT graduates the logic of the market means an increasing pressure to lower their financial expectations. Otherwise their attractiveness—regardless of their performance—would decrease and they would be replaced by cheaper workforce. This must be seen in connection with their qualification profile (cf. 4.1.4).

## Satisfying demand with qualified applicants

Companies hire PT graduates to get employees who meet their expectations regarding specific job profiles:

‘Now the job of a diploma engineer normally is on the shop floor to control the workers, to give them the needed job and to take the output, the job of the degree engineer is more into planning, quality, R&D such...’ (Interviewee C4)

PTs provide their students both with theoretical and practical knowledge so that they can be employed at the interface where both skills are needed, holding a bridging function between ITI graduates (and unskilled workers), who mainly do manual work, and white-collar degree engineers. This profile, which involves theoretical and practical know-how on a relatively high level, is unique in the Indian educational system. Because of their specific profile they have advantages but also disadvantages in comparison with other employees in the company:

‘Whether it is maintenance, whether it is manufacturing or something on the shop floor, diploma guys I’m sure that they will outrange the degree guy. No problem there. But if it is a theoretical job, say like design, you have to design a boiler, then the degree guys will outrange the diploma guy’. (Interviewee C4)

There is a high demand for PT graduates in Indian economy as it has been focussing on developing high quality production processes, and this development requires a larger number of highly qualified people like PT graduates (Pillay & Ninan, 2014, p. 21). However, there are not enough qualified applicants available. This incongruity is a result of the relatively low number of graduates and the increasing demand. Although PT graduates are considered to be relatively loyal (cf. 4.1.2), companies find it difficult to recruit them in satisfactory numbers as PTs do not qualify enough students who have a specifically needed profile (cf. 4.1.1). Besides, an increasing number of graduates tend to move on to colleges rather than seeking employment immediately (cf. 4.2.1).

#### *Effect on attractiveness*

There is both a significantly quantitative and qualitative mismatch in Indian economy concerning demand and supply of a certain kind of employees. In accordance with the logic of the market, companies try to fill vacancies with staff members who have the qualification required and are expected to work efficiently. These people can be found among PT graduates as the PTs provide their students with theoretical knowledge and practical skills at very good standard, which is a unique feature in the Indian educational landscape. This fact is often highly valued by entrepreneurs and classified as attractive. But the VET sector frequently fails to offer the economy enough applicants, which leads to a decline of attractiveness among demanders, although PT graduates would be attractive for many companies due to their unique qualification profile.

## **The colleges’ perspective**

### **Fulfilling state requirements, especially guaranteeing permeability**

Because of regulations of the education system PT graduates are entitled to entering academic courses at colleges. While the classic path to college is still via the 10 + 2 system, which is widely accepted in society, entrance via PTs is gaining importance. Permeability in the education system has become an important issue. Therefore, fulfilling state requirements

regarding admitting applicants who did not graduate at a Higher Secondary (12th pass) has become a main concern. Colleges often offer this option to students who had poorer marks in the 10th standard or who did not have the financial resources to pursue an academic career:

‘[...] now what is happening is, 80% of the guys who do diploma, want to do degree, because human aspiration has changed’. (Interviewee C4)

Because of the state logic and the official requirements, especially permeability, colleges are supposed to admit PT graduates. The latter either apply directly after having received their diplomas or enter the labour market until they have a sound financial basis for continuing with their further education. Some college courses can be done part-time, which usually diploma graduates prefer who used to work full-time or are still working alongside (Wessels & Pilz, 2018). Due to increasing academic ambitions of diploma graduates these are not available on the labour market, which leads to a quantitative mismatch as companies cannot cover their need for qualified staff with PT graduates:

‘Students have started taking interest in sitting in degree after diploma, the same trend you say last ten years or so, more are going to the higher education other than going to the supervisory level’. (Interviewee ECOL5)

The permeability of the system increases the value of a PT diploma. For instance, some places in the degree courses are reserved for diploma holders. Moreover, diploma holders have the late entrants’ status, which means they need not do the first year at college since they are considered to have acquired some basic knowledge in the field of engineering at their PT (UNESCO, 2020, p. 97).

### *Effect on attractiveness*

The logic of upward permeability in the education sector increases the attractiveness of a PT diploma. Besides, in India, too, the tendency to acquire academic education has become significant, while VET is seen as ‘second choice’ (e.g., Ahmed, 2016). The reasons for this trend are the chances of a higher income and social standing, better career opportunities and the pressure exercised by the society in general and one’s own family in particular (Schneider & Pilz, 2019). For them, the PT degree serves as a bridging function to higher education and is thus attractive to them.

Attractiveness is also given from colleges’ perspective. When admitting 12th pass students and also PT graduates, they meet state targets concerning the permeability in education. And they act in line with the logics of the market: bigger numbers of students entail higher financial contributions from the government and higher tuition fees. Finally, the more students there are enrolled at a college, the better its influence and standing within the education system. By meeting the state’s requirements, which are based on the colleges acting according to the state’s logic, the attractiveness of admitting PTs graduates by colleges is given.

## Performance and adaptability

Before PT graduates are admitted to college, they have done 10 years of primary and secondary education and a 3-year course at a PT in contrast to those students who have completed 12th

class and can directly enrol at a college after passing an entry test. Diploma holders from PTs have already finished a course in engineering and therefore can rely on basic knowledge relevant for their college studies:

‘They already learned the technology for three years, so they are technically sound’.  
(Interviewee ECOL2)

On the other hand, PT students have missed classes 11 and 12 of secondary education, which proves disadvantageous in Mathematics, which is eminently important for engineering students. College representatives also regard them as less competent in the field of language skills like communication abilities than the students having completed 12 years in secondary education:

‘They do good except for subject like mathematics. Because at diploma level they don’t study the mathematic subject in detail which we study at degree level’.  
(Interviewee ECOL2)

But because of the PT students’ high level of motivation and work ethics they manage to make up the leeway:

‘The [diploma] students, [...] we identify every year that they are more hard-working, because what they have in their mind, we have to compete with these group of students who directly come into engineering and we have come from the diploma, so they have to prove themselves, so they are more hard-working’.  
(Interviewee ECOL3)

And colleges often offer tuition courses to bridge the gap mathematical skills:

‘[...] because they miss out these maths basics, so we usually conduct those bridge courses for them, so that helps in building their basics in mathematics subjects’.  
(Interviewee ECOL2)

All in all, colleges regard the performance of students with a PT background as satisfactory, especially as they successfully compensate for their deficits through accompanying measures. And there are no differences between the two classes of students concerning drop-out rates and graduation grades, which shows that PT students have a high performance and adaptability capacity.

### *Effect on attractiveness*

High achievers are attractive for colleges since they have an impact on their ranking and because they easily find employment. After all, high referral rates and top performance by students considerably contribute to the college’s reputation and constitute a striking advantage over competitors in the market. PT graduates, who initially have some lower knowledge in certain fields than 12th pass students, are supported through college-funded tuition courses to enable them to catch up with their peers.

Advantages students from PTs have, are their technical knowledge in engineering, their readiness to work hard and their adaptability. Besides, weaknesses identified by companies like

a lack of work readiness are irrelevant at colleges because of the academic nature of the courses. All these factors make PT graduates an attractive target group for colleges.

## **DISCUSSION: THE ATTRACTIVENESS OF PTS AND ITS LOGICS FROM THE DEMAND PERSPECTIVE**

The paper examines the attractiveness of PT graduates. The attractiveness is studied from the perspective of the stakeholders who have a need for the PT graduates, namely companies and engineering colleges. For this purpose, experts from nine companies and 10 engineering colleges in Delhi and Mumbai were interviewed in 2019 to assess the attractiveness of graduates. The interviews provide interesting insights to the effect that companies and colleges assess the attractiveness of PT graduates very differently. There are several reasons for this, which are based on the IL of the companies and colleges. Due to the lack of employability of PT graduates, companies rate the attractiveness as rather low. In contrast, universities view graduates much more positively, as the weaknesses described by companies are less important to them. These observations are discussed in more detail in the following section.

Demanders have developed a varied view of the attractiveness of PT graduates. Companies seeing them as little desirable as employees. The latter do have an interesting qualification profile and could be of additional value for companies because of their theoretical and practical knowledge. However, they are deemed to be little attractive by enterprises as there are some serious quality problems and work readiness deficits, which prevent them from being employed in certain fields. Consequently, and in accordance with the logic of the market, companies are not prepared to offer them high wage packages, which in turn affects the individuals' decisions. They then rate PTs only as a second choice, choosing the direct way to college, which is more promising in terms of salary and social prestige.

According to the logic of the formal education system, diploma graduates are given the opportunity to transfer directly to college without having to complete the 12th class beforehand. The trend towards higher education is also very clear for PT graduates in India, partly because colleges consider graduates to be much more attractive than companies do. While companies often criticize the quality of PT graduates, this is only partly the case in colleges. This is also related to the different logics of the two actors. Colleges assess the attractiveness of PTs more positively, since the weaknesses described by companies, such as a lack of communication skills, have less influence in colleges than in companies. In addition, attempts are made to compensate for the academic deficiencies (such as the less well-founded knowledge in the area of mathematics) through special courses, while this is associated with high costs for the companies according to market-based understanding. By acting according to state logic and fulfilling state requirements, the admission of PT graduates is attractive for colleges, as they can expand their relevance and legitimacy in the education system through an increased number of students and, moreover, can only survive in market-based competition with other colleges if their graduates (incl. PT graduates) achieve positive results.

Competition in the education sector has significantly increased in recent years, especially as much more private institutions have been offering their services on the basis of market logics (Choudhury, 2016). The tendency to take up degree studies after graduating from PTs also has had an effect on teaching methods and contents at PTs. As many graduates want to move on to college, the focus has been shifted to providing more theoretical knowledge, which is of better use at college. So teaching practical skills has decreased, which in turn diminishes the



attractiveness of PT graduates further, as companies rate practical elements especially high for fulfilling their expectations regarding quality. This shows clearly how the stakeholders' different logics and ratings of attractiveness influence each other.

But there is also a downside for college graduates. Because of their high number, especially in the engineering sector, they are increasingly forced to fill job vacancies which used to be taken by PT graduates. Also the unemployment rate among degree engineers has been increasing (e.g., Khare, 2018; Kumar et al., 2005). And because of the oversupply of college graduates a decline of their wages may set in. This in turn could lead to a more positive perception of the attractiveness of PTs for two reasons. Their general concept is highly valued by entrepreneurs, and an increasing number of better qualified employees like supervisors will be needed because India's national economy is undergoing a structural change which will involve more knowledge-based occupation.

## CONCLUSION

The analysis of attractiveness of PTs from the demanders' perspective appears useful as it reveals how the relevant actors/stakeholders rate them and identify which areas need to be improved to increase attractiveness. This paper shows that the focus on logics is vital to understand stakeholders' perceptions. The various logics of the two actor groups—companies and colleges—underpin their different views concerning the attractiveness of PTs. As attractiveness is a multidimensional and interdependent concept, the actors on the demanding side have a strong influence on how this educational institution (here PTs) is generally perceived. Particularly in the Indian context these actors are highly relevant because the VET system aims at offering a larger number of qualified staff to the labour market. And also, the historic closeness between VET systems and labour market makes the employers' view important (King, 2020). The theoretical exploration of the ILs has revealed that the various logics considerably influence the stakeholders' view of attractiveness (Zoellner, 2020). How the various activities, strategies and identity patterns affect the rating effectiveness has been shown in this study.

The findings show that attractiveness from the colleges' perspective is clearly very strong in contrast to companies, which esteem it significantly lower due to their activity logics. For this reason, attractiveness particularly for this group of stakeholders should be increased. A decisive factor in this respect is enhancing the quality of PTs. The topic of poor quality within the VET sector in India, especially features like outdated curricula and unsatisfactory infrastructure, has been exhaustively discussed (Pilz & Regel, 2021). To improve quality a reform of teacher training is a prerequisite. Competent teaching staff that have both practical skills, didactic competence and technical knowledge are eminently important (Pilz & Regel, 2021). The quality and attractiveness could be increased if teachers were obliged to regularly gain practical experience in industries matching their subjects, thus learning more about new technologies. Further key elements are introducing employment-oriented curricula and modernising the educational infrastructure.

These improvements would also affect other stakeholders involved as they would, for example, lead to higher wages for graduates and a better social standing, which in turn would influence their choosing a particular type of educational institution. The Indian government has identified vocational training as a key factor for the positive development of the country's economy and taken steps to increase the position of this education sector and its institutions. However, India's entrepreneurs should get much more involved in this process as companies

are particularly interested in having their future staff trained according to their needs. Measures like well-structured internships for students on the basis of problem-oriented, hands-on projects and involving industry in developing new curricula would help increase the attractiveness of PTs.

Despite the PTs' obvious quality deficits, companies have a demand for graduates from PTs because of their curriculum, which comprises practical and theoretical elements on an intermediary level. This demand may even rise in the near future. This development has also been considered in the recent international scientific discussions about Higher VET. In several countries schools whose profile is similar to PTs are promoted and considered to be a solution for the skill mismatch (e.g., Canada). PTs have the potential to take over this role if they manage to sharpen their profile, focussing on their original role in the education system, that is, training students on an intermediary level and providing them with employable skills (Schneider & Pilz, 2019). Currently, PTs rather have a bridging function for those seeking academic. This trend makes the graduates attractive for colleges as these students contribute to meeting their logics regarding student numbers and financial resources.

Finally, some limitations of this study need to be pointed out. Apart from a larger set of samples an extension of the area in which the surveys were carried out would be desirable as significant differences between urban and rural regions are likely. It is very likely that PTs play a different role in rural areas, which usually lack bigger industrial companies, and that businesses there pursue different logics. A detailed breakdown of the data of the trades surveyed would be valuable as different lines of business may rate attractiveness differently, depending on their specific logics. Finally, an analysis of the views of all actors involved, that is, companies, colleges, individuals and the general public, would be useful to reveal and compare interdependencies between the different stakeholders' perception.

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## CONFLICT OF INTEREST

The author declares no conflict of interest.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author.

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