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## Impression formation of PhD supervisors during student-led selection: An examination of UK Business Schools with a focus on staff profiles

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<b>Corresponding Author:</b>	Ben Marder, PhD The University of Edinburgh Edinburgh, UNITED KINGDOM
<b>First Author:</b>	Ben Marder, PhD
<b>Order of Authors:</b>	Ben Marder, PhD Sebastian Oliver Amy Yau Laura Lavertu Claire Perier Mats Frank Kirsten Cowan
<b>Abstract:</b>	<p>Student-led selection of PhD supervisors is the dominant method of doctoral supervision allocation in Business Schools, especially in Europe. In many cases, students approach and petition potential supervisors before having any previous communications with the supervisor. Though, what process do students undergo when considering supervisors, especially when supervisors possess similar credentials? To date, research to understand the process is absent. Through the lens of impression management and the use of in-depth interviews (n = 19), we address this gap. Specifically, we examine how warmth and competence perceptions (i.e. The Big Two impressions) shape supervisor selection. Further, we provide understanding of the role academic staff profiles play in this process. We contribute first, a hierarchy of determinants for supervisor choice in ascending order of importance; gatekeeping attributes, competence, and warmth. Second, we provide a typology of stereotypical supervisors (The Guru, The Friend, The Machine, The Dud) based on informational cues from their profiles (i.e. high competence supervisors as colder, and high warmth staff as less competent). Third, we present a critical understanding of the opportunities and challenges of self-presentation through staff profiles. Finally, we offer specific advice for mobilising impression management tactics in these profiles to best appeal to PhD applicants.</p>

## **Impression formation of PhD supervisors during student-led selection: An examination of UK Business Schools with a focus on staff profiles**

### **Highlights**

- Impressions of potential PhD supervisors are critical in advisor selection decisions
- Perceptions of competence are paramount, while warmth is supplementarily advantageous
- Being viewed as too competent or warm can be off-putting to PhD applicants
- University staff online profiles are crucial in student-led advisor selection
- Advice for managing impressions for higher education practitioners are revealed

## **Impression formation of PhD supervisors during student-led selection: An examination of UK Business Schools with a focus on staff profiles**

**Ben Marder<sup>a</sup>** – [ben.marder@ed.ac.uk](mailto:ben.marder@ed.ac.uk) (Corresponding)

**Sebastian Oliver<sup>a</sup>** – [seb.oliver@ed.ac.uk](mailto:seb.oliver@ed.ac.uk)

**Amy Yau<sup>b</sup>** – [yaua@cardiff.ac.uk](mailto:yaua@cardiff.ac.uk)

**Laura Lavertu<sup>a</sup>** – [laura.lavertu@ed.ac.uk](mailto:laura.lavertu@ed.ac.uk)

**Claire Perier<sup>a</sup>** – [claire.perier@ed.ac.uk](mailto:claire.perier@ed.ac.uk)

**Mats Frank<sup>a</sup>** – [m.h.frank@ed.ac.uk](mailto:m.h.frank@ed.ac.uk)

**Kirsten Cowan<sup>a</sup>** – [kirsten.cowan@ed.ac.uk](mailto:kirsten.cowan@ed.ac.uk)

<sup>a</sup> University of Edinburgh, Business School, 29 Buccleuch Place, Edinburgh, EH8 9JS, Scotland.

<sup>b</sup> Cardiff Business School, Cardiff University, Aberconway Building, Colum Dr, Cardiff, CF10 3EU, Wales.

Corresponding Author: Dr Ben Marder, Senior Lecturer in Marketing, University of Edinburgh Business School.

## **Impression formation of PhD supervisors during student-led selection: An examination of UK Business Schools with a focus on staff profiles**

### **Abstract**

Student-led selection of PhD supervisors is the dominant method of doctoral supervision allocation in Business Schools, especially in Europe. In many cases, students approach and petition potential supervisors before having any previous communications with the supervisor. Though, what process do students undergo when considering supervisors, especially when supervisors possess similar credentials? To date, research to understand the process is absent. Through the lens of impression management and the use of in-depth interviews (n = 19), we address this gap. Specifically, we examine how warmth and competence perceptions (i.e. The Big Two impressions) shape supervisor selection. Further, we provide understanding of the role academic staff profiles play in this process. We contribute first, a hierarchy of determinants for supervisor choice in ascending order of importance; gatekeeping attributes, competence, and warmth. Second, we provide a typology of stereotypical supervisors (The Guru, The Friend, The Machine, The Dud) based on informational cues from their profiles (i.e. high competence supervisors as colder, and high warmth staff as less competent). Third, we present a critical understanding of the opportunities and challenges of self-presentation through staff profiles. Finally, we offer specific advice for mobilising impression management tactics in these profiles to best appeal to PhD applicants.

**Keywords:** Impression Management, Student-Supervisor Relationships, Supervisor Selection, Doctoral Supervision, Warmth, Competence

## 1 Introduction

*“Your relationship with your supervisor is probably the most crucial variable that will affect how you experience the PhD journey [...] However, often little importance is attached to specifically discussing how you end up with a supervisor,”* Churchill and Sanders (2007 p. 33).

Students invest significant time and effort in order to obtain a PhD. At the completion of their PhD, students should exhibit expertise in their field and a range of other skills (Lean, 2012). Sadly, 20% of students who enter a PhD programme in the UK never complete their degree (Jump, 2013). More recent research suggests that this failure rate may be closer to 50% (Kyvik & Olsen, 2014; Litalien & Guay, 2015; Spronken-Smith, Cameron, & Quigg, 2018). Though, having a successful PhD supervisor-supervisee relationship can prove vital to attainment of a PhD (Churchill & Sanders, 2007; Denicolo, 2004). After all, supervisors help build students’ expertise in a field, mentor them in developing skills needed for a career in academia, and provide support during challenging times. PhD students end up with their supervisors in a number of different ways, including responding to advertised supervisor-led projects, allocation by departments based on alignment in topic and methodological expertise, pre-existing relationships developed from undergraduate or master’s study, and student-led selection. The dominant mode of selection varies across institutions and countries, but for Business Schools within Europe and specifically the UK, student-led selection largely drives supervisor allocation (Ives & Rowley, 2005; Smeby, 2000).

Student-led selection has its advantages and disadvantages. On the one hand, research demonstrates that student involvement in PhD supervisor allocation increases the chances of successful completion of a PhD (Ives & Rowley, 2005). On the other hand, student-led selection requires students to know which supervisors would have expertise in their topics and amenable to support their PhD process. This mode demands that students engage in an in-depth *search* for potential supervisors through viewing staff profiles from particular institutions, both locally and globally. Such research is followed by *reaching out*, most often by email to potential supervisors to gauge their interest and progress conversations towards the possibility of supervision. In fact, institutional webpages (Edinburgh, 2020; UCL, 2020) promote this ‘search and reach out’ strategy.

Staff profiles can only convey brief details to PhD students. In some cases, students could make poor decisions about whom to approach, which would have long-term consequences on successful completion of their degree. Given the paucity of knowledge students have about prospective supervisors, what processes do students undertake to inform themselves and make decisions regarding whom to reach out to? To date, research has yet to explain why students select certain supervisors but not others, nor has extant literature investigated the role staff webpage profiles play in this decision. Broader research implies that student-led selection goes beyond simple alignment of a research topic or method, but instead considers strong supervisor-student ‘chemistry’ (Churchill & Sanders, 2007; Denicolo, 2004).

Given the aspects to consider when choosing a supervisor, the decision can become highly involving. For the supervisee, a supervisor can be abstracted as a “partner in adventure” (Denicolo, 2004, p. 705), a person who they will work closely with and depend on for a long period of time. Though little work exists on student-led selection of supervisors, insights can be drawn from situations where people search for others to establish successful long-term relationships (e.g. supervisors recruiting students, job recruitment, and dating). What is apparent across contexts is that first impressions matter. For example, supervisors and managers are turn-off by candidates that appear to lack skills projected by their CV (Floyd & Gordon, 1998; Moss & Tilly, 1995).

First impressions are widely accepted to be powerful predictors of intentions to interact further with a subject (Willis & Todorov, 2006). For example, students that have bad first impressions of instructors were found to interact less with them into the future (Kelley, 1950). Snap-impressions may last months and can even bias the internalisation of future evidence that contradicts initial judgments (Gunaydin et al., 2016; Rydell & McConnell, 2006). Within impression formation literature, the Big Two impression features include warmth and competence (Cuddy et al., 2011; Fiske et al., 2002; Fiske, 2018). Warmth and competence are especially pertinent within first impressions (Kelley, 1950). Individuals perceive a person’s warmth and competence from a wide array of verbal and non-verbal stimuli, such as language, dress, and facial expressions (Marder et al., 2019; Parhankangas & Ehrlich, 2014; Sebastian & Bristow, 2008; Wayne & Liden, 1995). By perceiving warmth or competence, people automatically make stereotypes associated with warmth or competence salient. In doing so, people predict others’ behaviours according to the respective stereotype, which will, in turn, affect how those others respond (Cuddy et al., 2011). In particular, those

perceived high in warmth are considered more compassionate, pleasant, and empathic (Amaral et al., 2019; Cuddy et al., 2007; Cuddy et al., 2011; Widmeyer & Loy, 1988), and are therefore associated with engaging in active helping behaviours (Cuddy et al., 2011). Likewise, people perceived high in competence are often believed to be more effective, independent, and skilled (Amaral et al., 2019; Wojciszke & Abele, 2008) but stereotyped to be less active as helpers, assisting more passively out of obligation (Cuddy et al., 2011).

Existing research on PhD student-supervisor relationships suggests that students generally want their supervisor to be both warm and competent. That is, PhD students need academic expertise in specific topics and methods and also more general pastoral and research motivation support (Denicolo, 2004; Mainhard et al., 2009). While, warmth and competence perceptions of supervisors are likely to impact PhD supervisor selection, at present no research has examined the co-existence of the Big Two impressions in shaping this process. Our first aim is to address this gap. Second, given the role of academic staff webpage profiles in the ‘search and reach out’ process, we consider them as critical objects for supervisor first impressions. The importance of their role is supported by research on the impact of CVs, personal websites, and social media pages on determining success of job applicants (Acquisti & Fong, 2020; Sameen & Cornelius, 2015; Vogel & Rose, 2017)..

Through in-depth qualitative exploration, this research offers four contributions important for management education theorists and practitioners. First, we propose and critically discuss a hierarchical relationship amongst key gatekeeping attributes, competence, and warmth determinants for supervisor choice. Second, we contribute a nuanced understanding of stereotyping of supervisors based on impressions of warmth and competence, which we illustrate in the supervisor impressions typology. This involves, for example, supervisors who project high levels of competence being typecast as colder and potentially neglectful. Third, we provide critical discussion of the opportunities and challenges of self-presentation through staff profiles in recruiting PhD students. Lastly, we offer a list of key impression management techniques that can be enacted through staff profiles and consideration of how these can be best mobilised.

## **2 Literature Review**

## ***2.1 Student-Supervisor Relationships in Doctoral Research in Business***

A PhD, that is a Doctorate of Philosophy, is the highest accredited educational degree offered in most countries (Park, 2005). Traditionally, in UK business schools, a PhD is awarded after at least three years (six years) of full-time (part-time) study, during which candidates must produce a thesis that demonstrates significant and original contributions to academic knowledge. While the process can be incredibly rewarding (Phillips et al., 2015), it can also be demanding, gruelling, and stress-inducing (Furstenberg, 2013; Offstein et al., 2004). The high-pressured nature of the PhD environment has led to challenges for many students, leading to high attrition rates of up to 70% in many doctoral programs (Jones, 2013). As a result, academics and researchers of higher education studies have taken interest into understanding the factors that may impact the experience, educational quality, and overall success of these students. There are several reasons why improving the PhD student experience is highly important. For higher education institutions, program failure can be costly both in time and resources, with faculty wasting time on projects that will never be completed. (Litalien & Guay, 2015). Furthermore, an unsupported student experience may reflect poorly on the university, potentially impacting student satisfaction, student evaluations, and thus university rankings (Brown et al., 2015; Gibbons et al., 2015; Hester, 2008). Experimental research by Van Rooij et al. (2019) found four key determinants of PhD completion and satisfaction: student sense of belongingness, amount of freedom in projects, the ability to work on projects closely related to the supervisor's research, and perceived quality of the supervisor-supervisee relationship.

One of the most widely cited factors in determining the successful completion of a PhD is the supervisor-doctoral student relationship (Churchill & Sanders, 2007; Denicolo, 2004). In fact, a review by Leonard et al. (2006) suggests supervisors should pay more attention to the development of their doctoral researcher relationships. From the definition of a PhD's outcome, that is to "independently conduct original and significant research in a specific field or subject" (Higginbotham, 2018), one may think that supervision might be based solely on developing academic knowledge and progressing one's research. While these factors are of high importance (Vilkinas, 2002), they may not reflect the whole picture. This supposition has also been shown within recent pedagogical shifts which focus on creating more personalised and connective experiences for students that are less 'transactional' (Lee &

Schallert, 2008; Mainhard et al., 2009; Manathunga & Goozée, 2007). Indeed, the traditional view of doctoral students as solely ‘scholarly disciples’ who merely ‘absorb the supervisor’s knowledge and skill’ may only be a partially-correct, limited view of a greater reality (Manathunga & Goozée, 2007, p. 309).

In recent years, research focussed on developing a deeper understanding of characteristics relevant to excellent supervision has emerged. Churchill and Sanders (2007) suggest that while research alignment is a clearly important facet of successful supervision, personal compatibility should not be overlooked, with one participant claiming their first-supervisor relationship was unsuccessful due to the inability to ‘do business’ at a more personal level. This finding aligns with research by Denicolo (2004) and Lindgreen et al. (2002). These researchers suggest that students look for supervisors who are reliable, encouraging, knowledgeable, informative, and sharing. Furthermore, the researchers claims that excellent supervision is characterised by the ability to: convey knowledge in certain areas, provide continuous and fruitful feedback, constructively challenge students, show enthusiasm towards shared visions, and demonstrate human warmth and understanding in times of need. Contrarily, supervisors expect their supervisees to work independently and productively, show interest in relevant research, and receive advice openly (Lindgreen et al., 2002).

Metaphorically, in the eyes of the supervisee, the supervisor might be thought of as a “partner in adventure who knows the ropes better” (Denicolo, 2004, p. 705). This idea of a ‘partner in adventure’ signifies attributes of a relationship with more camaraderie, as opposed to the superior-subordinate relationship which has long been prescribed in traditional education. As shown in the previous literature, providing students with a certain level of humanity through encouragement, enthusiasm, and friendliness may indeed go a long way in improving the student experience (Churchill & Sanders, 2007; Ives & Rowley, 2005). On the other side of the metaphor, ‘knowing the ropes better’ insinuates that the supervisor holds the skills, mastery, and competence needed to ensure strong academic development through the PhD process. Therefore, excellent supervisors must critically balance two key categories of attributes (Mainhard et al., 2009). One category encompasses characteristics and actions which aim at fostering academic knowledge and disciplinary growth within students, the other aims at ensuring that students feel supported and comfortable through the PhD journey.

This bifurcation of characteristics has similarly been shown in relevant literature. For example, Mainhard et al. (2009) suggests that the ideal supervisor-supervisee relationship offers high influence (e.g., leadership, helpfulness) and high proximity (e.g. friendliness, understanding). Likewise, a three-year longitudinal study conducted by Ives and Rowley (2005) investigating elements of successful PhD student-supervisor relationships found three main conditions that increased the likelihood of overall student progress and satisfaction. These included, student involvement within the selection process of a PhD supervisor, cohesion between research topic and supervisor expertise, and strong interpersonal relationships between the two.

While selection of a PhD supervisor is probably the most important decision in the PhD process (Phillips et al., 2015 p. 14), how students ends up with their supervisors is an important, yet overlooked feature (Churchill & Sanders, 2007). In the UK, the majority of business schools within leading research institutions offer self-selection, though, in some institutions, student-led selection is not available. We focus our research on self-selection cases. We seek to understand how supervisors may best convey important characteristics to prospective students who are undergoing the critical stage of their PhD journey, that being supervisor selection.

## ***2.2 Impression Formation of PhD Supervisors***

Impression management, also known as self-presentation, describes any conscious or unconscious efforts towards altering the way others perceive oneself (Gardner & Martinko, 1988; Goffman, 1959; Leary, 2001). Through verbal (e.g. *self-promoting utterances, exaggerations, excuses*) and non-verbal behaviours (e.g. *gestures, smiling, props*), individuals can create, maintain, or adjust the way others perceive them (Peeters & Lievens, 2006). Importantly, all social interactions are mediated by held impressions of one another (Goffman, 1959; Leary, 2001). It is for this reason, that motives behind the individual use of impression management techniques often align with enhancing social statuses, economic gains, and self-identity creation, maintenance, or alteration (Baumeister & Leary, 1995). The impressions audiences form (e.g. high class) determines attitudes toward and subsequent behaviour towards a presenter. For instance, when perceiving someone as ‘high class’ people

may want to approach or avoid this person, and would even approach and speak with the person in specific manners, according to what is expected from a 'high class' role.

Two main traits represent the most significant determinants shaping judgements of individuals – warmth and competence (Cuddy et al., 2011; Fiske et al., 2002; Fiske, 2018). Warmth is represented by character traits such as friendliness, trustworthiness, empathy, and kindness, while competence reflects intelligence, power, efficacy, and skill (Amaral et al., 2019; Cuddy et al., 2011). These two dimensions are often stereotyped as bipolar; individuals who are perceived as more competent are often perceived as colder, while those perceived as warm are often perceived as less competent (Holoien & Fiske, 2013). For this reason impression management strategies are often enacted by people to avoid typecasting (Holoien & Fiske, 2013). These perceptions are based on societal stereotypes derived from attributes such as one's economic status, age, and gender (Wilson et al., 2014). For example, research shows that certain groups (e.g. senior citizens, mothers, the disabled) are inherently perceived as less competent, yet more warm, whilst the other groups (e.g. the rich, professionals, technical experts) are perceived as highly competent, yet less warm. (Cuddy et al., 2004; Fiske, 2018). People generally strive to be perceived as high-competence and high-warmth and avoid the opposite (Cuddy et al., 2007).

Research has shown that judgements are often assigned instantaneously and may be long-lasting. Willis and Todorov (2006) found that judgements of both warmth and competence are made as quickly as 1/10<sup>th</sup> of a second after exposure to simple visual stimuli (e.g. a photograph). Further research on first impressions suggests that these snap-decision judgements may last months, even when perceivers possess evidence contradicting their initial judgement (Gunaydin et al., 2016; Rydell & McConnell, 2006). As a result, these judgements may affect subsequent evaluations on individual attributes (Nisbett & Wilson, 1977). For example, individuals perceived as warm may also be perceived as supportive, compassionate, pleasant, and effective (Amaral et al., 2019; Cuddy et al., 2007; Cuddy et al., 2011; Widmeyer & Loy, 1988). Likewise, individuals perceived as competent are often evaluated to be more effective, independent, active, and energetic (Amaral et al., 2019; Wojciszke & Abele, 2008). In particular, Cuddy et al. (2011) posits warmth to predict active facilitation (i.e. active helping and serving) whereas competence predicts passive facilitation (i.e., obligatory association, convenient cooperation). Furthermore, different variations of warmth and competence tend to motivate individuals to engage with others in more complex

ways. For instance, people tend to view those low in both warmth and competence with contempt. They tend to envy (pity) those low (high) in warmth but high (low) in competence. Finally, those high in both warmth and competence tend to be admired (Cuddy et al., 2007).

We predict that impressions of PhD supervisors to most likely reflect high-competence and low-warmth, based on varied research (Cuddy et al., 2007; Fiske, 2018). We base this on the following reasons. Academic staff are ‘technical experts’ in their own domains, hold the highest educational accolades (PhD), and are perceived as intellectual leaders amongst society (Macfarlane, 2011). However, we acknowledge that competence perceptions may vary widely amongst staff of whom all hold PhDs, based on number of cues (e.g. no. of publications, job title, grant success, etc.). Therefore, it is likely that some potential supervisors are perceived as comparatively less/more competent than others, and therefore likely stereotyped as more/less warm respectively (see Cuddy et al., 2011). In addition to salient stereotypes, applicants will also be faced with interpreting impression management tactics, consciously or unconsciously enacted by academic staff, to offset such stereotypes. For example, a Professor may adopt an informal/friendly tone of voice to avoid perceptions of low warmth. In fact, recent research supports the use of smiley emojis by academic staff to increase perceptions of warmth (Marder et al., 2019). Understandably, students navigate a wealth of impression formation cues during their search phase from multiple sources (e.g. direct communications, staff webpages, social media). Such impressions will be weighed against their prioritisation for supervisor competence versus warmth, which will depend on their own background and experiences.

Applicants are largely faced with a wealth of options for potential PhD supervisors to pursue, whom all adequately align with their research interest. Impressions of warmth and competence are likely to act as means to narrow down options and select a supervisor as they provide signals for how their supervision would be. Research in professional recruitment and online dating suggests that the tiniest first impressions are enough to reject or rally behind a candidate/romantic partner (Dougherty et al., 1994). However, though PhD recruitment is a key concern for institutions (Brown et al., 2015; Gibbons et al., 2015; Hester, 2008; Jones, 2013) and understanding supervisor-students relationship formation and development is a pursuit for education management scholars (Armstrong et al., 1997; Bigelow & Johnson, 2001; Mainhard et al., 2009), at present, no existing research provides direct knowledge on

decision making in student self-selection, and specifically, how the interplay of warmth and competence impressions determine supervisor selection. Thus, our first aim is as follows;

*Aim 1: To examine how the co-existence of competence and warmth impression shape supervisor choice during student-led selection.*

### **2.3 The Role of Academic Faculty Profiles**

The vast majority of academic faculty have a staff profile, a webpage devoted to them embedded in the school or university website. Though these are the shop window for academic staff associated with an institution to a wealth of stakeholders, including fellow researchers, students, funders, and industry partners, this arguably important medium for self-presentation has remained nearly unexplored by scholars. There are two notable exceptions. First, a study by Wayne and Mogaji (2020) analysed staff profiles across 136 UK universities, finding profiles to include information in the following domains; personal, educational, research, engagement, and industry. Furthermore, they found many instances of outdated and incomplete profiles (missing whole sections or photos). Second a content analysis of profiles at US institutions, found lower ranking academic staff provided more information in their profiles than higher ranking staff, where staff profiles resembled online CVs. UK University profiles are the “most hotly debated pieces of functionality that we have tackled on the new University website” (Millar, 2019), where staff members want to share their views on how profiles should be presented. Nevertheless, no research provides strategic advice on how to best present yourself to third parties through staff profile pages.

In general, digital platforms (e.g. personal websites, social networking) are widely accepted to be valuable tools for gathering information about a person (Brown & Vaughn, 2011; Kim et al., 2014) and forming impressions about them (Aresta et al., 2015; Utz, 2010; Weisbuch et al., 2009). Social media profiles have been hailed as a foremost space for impression management (Marder et al., 2016). Information presented in online profiles aims to promote positive perceptions and represent ‘highlight reels’ of one’s accomplishments and experiences (Vogel & Rose, 2017). Turner and Hunt (2014) demonstrated that trait perceptions from a profile help inform judgements of them, and align with the features provided in the online profiles. A study by Vogel and Rose (2017) found that exposure to Facebook profiles increased participant evaluations of socially desirable characteristics in

others which were related to warmth (e.g. likeability) and competence (e.g. intelligence) dimensions. These formed perceptions lead to a downstream effect on behaviour towards the individuals appearing in these profiles. For instance, Acquisti and Fong (2020) found that disclosures of personal traits in online profiles have a significant impact on employer hiring decisions.

Universities themselves and third-parties actively promote the ‘search and reach out’ process by PhD students. They advocate prospective students to use the staff profile pages to locate supervisors who align with their research interests and some explicitly encourage reaching out to these supervisors (e.g. Bennett, 2020; Edinburgh, 2020; UCL, 2020). However, beyond the very mechanistic function of profiles during self-selection to whittle down supervisors based on research interests gleaned from non-research based resources, there is little understanding of the role of academic staff profile pages in student-led supervisor selection. Given that such profiles represent arenas for self-presentation, and prior research demonstrates that online representations can instil impressions that heavily impact attitudes and behaviours of an audience, it is important to explore more deeply the role of academic staff profile pages in student-led selection. Beyond contributing to knowledge on impression management within education, findings can aid in providing much needed advice on suitability of impression management tactics employed by supervisors to best attract PhD applicants. Our second aim follows.

*Aim 2: To explore the role academic staff profiles in student-led selection.*

### **3 Methodology**

In line with the exploratory aims of our research a qualitative methodology was embraced, allowing us to obtain rich and comprehensive accounts of the phenomenon through shared experiences of participants (Ary et al., 2018; Denzin & Lincoln, 2005). Specifically, we adopted a semi-structured interview approach which involved questions guided by previous work on impression management (Llama et al., 2012; Ward, 2017), as well as discussion of prompts (i.e. fictitious supervisor profiles) and a projective technique (i.e. the writing of an academic profile by the participant). Prompts are often used in interviews to aid participants

in recalling and reflecting on phenomenon, supporting but sometimes challenging their existing beliefs (Yau et al., 2019). Our prompts consisted of seven fictitious academic profiles said to be taken from the websites of UK business schools. These prompts were designed by selecting seven profiles from a review of profiles at top UK business schools, that portrayed common stylistic differences (e.g. written in first vs. third person) as well as perceived difference in the communication of warmth and competence (e.g. some profiles included a joke whereas others simply listed achievements). The seven selected profiles were significantly edited, removing any identifying information, though their essence was maintained.

Projective techniques are methods that allow for deeper exploration of conscious and unconscious impressions, through participant projection through different medians (e.g. drawing, story-telling) and are known to be particularly important in examining students who are often 'bored' of being asked to participate in yet another research project (Catterall & Ibbotson, 2000; Kainzbauer & Lowe, 2018). A number of different types of projective techniques exist, from which we adopted an 'expressive technique' that involved participants incorporating stimuli into novel production (see Lindzey, 1959). Specifically, we asked participants to imagine they were in the role of a Lecturer/Assistant Professor at a UK business school, providing them with a list of their achievements/job activities in that role (e.g. conference prizes, publication in broad business journals, courses taught). From this stimuli, they were asked to write a profile for themselves that would be used for their school's webpage that would appeal to potential PhD students. Participants were asked to do this task before the interview took place but were also offered the opportunity to do this during the interview if they preferred. Constructed profiles were discussed during the interviews.

We employed a purposeful snowball sampling technique, common within qualitative higher education research (Thabo & Makoelle, 2020; Williams & Allen, 2014). Specifically, we sampled Masters in Research students (who intended on PhD study within the UK but who also undertook a supervisor search) as well as first and second year PhD students whom all studied at UK business schools. Critically, participants needed to have recent experience in searching for a thesis supervisor. It is important to note that interviews were conducted in October 2020 thus students were all at the start of the academic year. Therefore the second year PhD students will have engaged in an supervisor search within the last two years, an

appropriate time delay for satisfactory recall of event (Dex, 1995). Recruitment occurred through student mailing lists at UK business schools based on the first author's network. Participants were told the project was about understanding motivations to choose a thesis supervisor and were offered a first view of key findings prior to publication. In total nineteen interviews were conducted (57% Female, 63% Second Year PhD) with students studying a broad range of business sub-disciplines. Each interview lasted between 45 and 120 minutes. Interviewees are summarised in Table 1 below. Interviews took place via online video chat (due to COVID restrictions), being then recorded and transcribed. Interview discussions were structured as follows. First, general motivations to do a research degree were discussed, followed by motivations to choose a supervisor, and then the role of online profiles in selecting and reaching out to potential supervisors. Finally, discussions focused on the prompt materials and profiles written by the participant.

*Insert Table 1 Here*

Thematic analysis operated as the analytical method and was conducted by four members of the research team. Specifically, we conducted a 'bottom-up' approach within an interpretivist theoretical framework in order to interpret the participants' reality and uncover latent themes (Braun & Clarke, 2006). This is a common approach applied in educational research (Igwe et al., 2019; Ndubuka & Rey-Marmonier, 2019). This approach involves six steps: familiarization, generation of initial codes, searching for themes, theme revision, defining themes, and finally the production of the report. Transcripts were cross-checked for accuracy by members of the team. Themes and codes were developed individually by each of the four researchers conducting the analysis, then were cross-examined by one another. In-depth discussion led to triangulation of the themes and consensus amongst the researchers.

#### **4 Findings**

From our thematic analysis five overarching themes emerged; 1) gatekeeping attributes, 2) competent though cold, 3) warm though incompetent, 4) competence is king with warmth the cherry on top, 5) profiles, a good starting point for impression formation. Furthermore, our data provided knowledge of a number of specific impression management tactics to be considered by supervisors in attracting applicants, which will be presented in the overall discussion. Our core themes will be now presented in the order above.

#### **4.1 Gatekeeping Attributes**

Unanimously, participants expressed research alignment and/or university attributes as rather objective gatekeepers for supervisor consideration. The majority of participants engaged in effortful searches for supervisors across business schools within their broad subject discipline to locate those whose research and methodological interests align with their own. For example:

*“I need to admit mainly I was looking for key words based on research interests. So whenever I read something like actor network theory and so on I know, OK, this might be good. And when I read something into the direction of quantitative research or, I don't know, something I never heard of, that kind of scared me off. OK. This is the wrong person.”* – [Charles]

Reminiscent of most interviewees, Charles clearly states that for a supervisor to be considered further, their theoretical interests and methods must align with their own. The critical nature of alignment is supported by prior work on successful supervisor-student relationships work (Churchill & Sanders, 2007; Lindgreen et al., 2002). For other participants, alignment was considered based on institutional attributes, particularly prestige was paramount. University location was mentioned as well. For instance,

*“I just use university titles to filter, for example, top 50 or top 30 universities. And then, for example, I decided top 30 universities. And then from top one to the 30<sup>th</sup>, I will look at all of the scholars in these 30 universities. [...] University is kind of the screening factor. I just want to save my time. I know that there are some good scholars in some smaller universities. But again, I can't search for all of the scholars in the world.”* – [Zoe]

For Zoe and others, University prestige was critical for shortlisting supervisors to reach out to. Decisions were made based on rankings and perceptions of Universities, with students making rather clear-cut decisions on whether a University was prestigious enough or not. These respondents believed that University prestige was a cue for quality of supervisors but arguably more importantly the value of the degree. It is noteworthy, that prestige as a

gatekeeper was more prominent for our participants from China. Prior research supports institutional prestige to drive student choices and is known to be of particular significance for international students from Asia (Hazelkorn, 2011; Scott, 2019). The gating attributes discussed in some combination act to filter down potential supervisors. However, with a wealth meeting the gating criteria, options are still plentiful and so students need to narrow their options further. Thus, applicants commence a deeper stage of impression formation based more on subjective cues.

#### ***4.2 Competent but Cold***

Participants all expressed that they must perceive a supervisor as adequately competent to consider them further. This sentiment is captured by Abby, *“Competence is essential, it goes without saying after all the PhD is about expertise. So it's essential. They have to have expertise.”* Participants were acutely aware of the intellectual challenge a PhD presents and knew foremost to be successful they need a “partner in adventure who knows the ropes better” (Denicolo, 2004 p .705). First impressions of competence were gained through a number of cues, including seniority of position, evidence of a productive publication career, and indication of prior PhD student completions. For example, Ruby stated, *“I had certain checkboxes. So like a professor [...] who is really well published.”* *“Given a choice between supervisors, I would always choose somebody who is more experienced and with more publications,”* remarked Jamie. Publication frequency cued not only general research expertise important for PhD completion, but greater potential that their PhD research would become published. The latter was considered for some very important, with the competitive nature of academic positions salient for many participants.

The data revealed that cues for high competence, were often perceived as double-edged swords, cueing that the supervisor may potentially lack warmth. Therefore many participants expressed cognitive dissonance when they pondered supervisor competence as too high. This is illustrated in the following quotes.

*“Normally when I start seeing Director of something I will be like, nah, I'm not going with this. [...] To be honest, I think he has the potential to actually push me more. Give me some form of connections [a greater academic network] when it comes to the*

*future, and hurry me up with my PhD. He has that capacity. But I do not think he would have time.” – [Zak]*

*“If they get too many publications and they continue to publish their journals, maybe they will just like use most of their time to write their journals instead of helping students. I am kind of worried about that. What if they just focus their attention to publishing in journals instead of taking care of their students.” – [Maya]*

Zak’s comments show a struggle with two competing cues signalled by being a Director. They acknowledge that the title cues high competence, that this seniority may be beneficial as the supervisor may challenge them more, facilitate network building, and has the capacity to speed up PhD completion. On the other hand, this raises worries that the supervisor will not have time for their research. A similar sentiment is expressed by Maya, from cues taken from evidence of excessive publishing. This concern over lack of time present in both quotes, we interpret as a signal of lacking warmth which is associated with active helping behaviours (Cuddy et al., 2011) a common stereotype of individuals perceived high in competence (Fiske, 2018). Hence, although the supervisor has the capacity to help there are doubts they actually will, leaving students fearing neglected. The following quote highlights a further downside of a supervisor appearing too competent.

*“I was a little bit intimidated by people who had an obviously really high level academic career with lots of publications. I wasn’t sure I’d be able to work with them on an equal footing”. – [Ella]*

The expression of intimidation felt coupled with articulation of a potentially hindering hierarchy, again supports the stereotype for individuals perceived high in competence to be low in warmth. Upwards social comparison with people associated with this stereotype are known to cause envy, dislike, and fears of hostility (Cuddy et al., 2011; Smith, 2000). Further participants noted excessive articulation of achievement though portrays academic competence can resemble boasting and may appear narcissistic, a trait that widely known to be cold (Campbell & Baumeister, 2006). A first impression of competence is critical for supervisors to be considered, as this is consider essential for PhD success. However, it is clear that cues (e.g. publication record) that portray very high levels of competences can

simultaneously signal a deficit in warmth, reducing perceptions that the supervisor will engage in active helping behaviours, as well as give rise to negative emotions such as envy.

### ***4.3 Warm though incompetent***

Warmth impressions were considered as an attractive trait by all participants in choosing a supervisor, as they symbolised supervisors would be helpful, approachable and attentive. Warmth is well-known to be associated with active facilitation such as helping behaviours (Cuddy et al., 2011; Peeters & Lievens, 2006). The following quote exemplifies the importance of warmth impressions within supervisor selection.

*“You want somebody [a supervisor] who gives back something to you. You know, they're willing to engage with your ideas and give you feedback. And if you're stuck, they are waiting to help you find a way out in a sense. So, if they were not warm at all, they would not be interested in assisting me or guiding me through the process. It is also very important to me that that we work as a team, so that there is mutual respect and I know that I don't feel like I'm being treated like a student but more like a colleague” – [Ella]*

Beyond the association between warmth and helping behaviours this quote highlights a point made by a few participants, that warmth perceptions aid in reducing unwanted hierarchical divisions that were perceived as a hindrance to a preferred working relationship. Specifically, participants expressed warmer supervisors would treat them more as equals, compared to those who were perceived as highly competent but less warm. The following quote illustrates an occurrence where a supervisor perceived high in competence was excluded from consideration.

*“The other person I talked to in the application process was from another university. They seemed competent. But they seemed to lack this empathy [...] So in a sense, I was very quick in excluding them.” – [Charles]*

For this participant an impression of being unempathetic was critical enough to exclude a potential supervisor from consideration, even though they deemed them as competent. Empathy, an attribute of warmth (Cuddy et al., 2011), is known to be important for successful

student-supervisor relationship development (Duffy et al., 2018) and relationships in general (Stephan & Finlay, 1999). The data clearly shows that warmth impressions are positive signals for a well-functioning supervisory relationships. Abby expresses below how warmth impressions are appealing in the selection phase, as they can help alleviate apprehensions.

*“I think that if you really are a warm person, it will help you to attract more students. We get to know you easier because you remove somebody’s fears by showing an element of warmth.”* – [Abby]

We interpret this reduction in fear as a reflection of warmth because warm people are stereotyped as active helpers and therefore such warmth signals supervisors will be supportive during the PhD (see Cuddy et al., 2011). However, similar to the negative stereotypes associated with those who signal very high competence, appearing too warm can also cast a negative impression. The following quote is reminiscent of sentiment of a few participants, who responded to one of the warmer examples of supervisor profiles, where the supervisors had used informal language and a joke. Abby suggested, *“It is very warm, but perhaps they are not very pragmatic. So I would be slightly worried if I would manage to finish a PhD in three year.”* Here the participant associated the warmth in the profile with a lack of competence, which was off-putting. This resonates with the accepted stereotype that people high in warmth lack competence (Fiske et al., 2002; Fiske, 2018).

With reference to the same example profile discussed above, Charles stated, *“I know it was good, but in a way, it was too much that they were a little bit too open [...] He appeared a little bit too unprofessional.”* In a similar vein to the previous quote, this participant associated warmth with a lack of competence, arguably in the area of social competence, as the profile was seen to transgress the norms of formality they associated with staff profiles.

This sentiment was shared by other interviewees who commented on strategies used by supervisors, arguably to appear warm in profiles. For example May reflected, *“When he said my passion is truly teaching and students, [...] for me, it's just virtue signalling. [...] I know for supervisors [...] it's not only about teaching.”* *“He tried to be cool, which is just unbelievably annoying. So anybody who calls himself a social media nerd is just absolutely off the scale to me,”* Kai articulated. Warmth impressions overall were seen as desirable in supervisor selection; however, it was clear that being seen as too warm or projecting warmth

can have negative effects on perceived competence and therefore an supervisor's appeal to applicants.

#### ***4.4 Competence is King with Warmth the Cherry on Top***

A hierarchy of determinants for supervisor selection clearly emerged from the data. There was consensus among participants that within the selection phase that, first, gatekeeper attributes (research alignment and university attributes) were considered. If a supervisor, sufficiently aligned with their interests and/or the university was deemed suitable (e.g. prestigious enough), attention then turned to forming an impression of a supervisor's competence. If deemed competent, then impressions of warmth were considered. The following quote illustrates this hierarchy of determinants.

*I looked on the website at the profiles first looking at their areas of expertise. So, I focussed on strategy people. And I also looked at people who know about privatised and public sector. And then I looked, as I said, at their business as well as academic experience. I also looked at publications. If it's a fairly high level, I also looked at the language of the profile. Do they sound approachable?" – [Ella]*

Ella exemplifies a three-tiered approach underpinning their search through supervisor profiles, first locating supervisors whom align with their research interest in strategy and particularly sector studies. Following this, competence impressions are sought from business experience and publications. Subsequently, if competence is considered at a 'fairly high level', they will consider the supervisors approachability (i.e. warmth) cued through language. The notion that competence is the critical impression in the selection phase and warmth is an added desirable is further support in the quote below.

*"Competence is essential, after all the PhD is about expertise. So it's essential. There has to be their expertise to show. I don't think warmth is necessary. I think this is almost the cherry on the top. But if you show it, I think is a nice gesture." – [Abby]*

In essence, participants expressed that they would consider a supervisor that was high in competence but low in warmth but not high in warmth and low in competence. The ideal would be someone high in both, illustrated in the quote below. The data suggests applicants

want to feel admiration and pride for their supervisors, emotions associated with upwards social comparison with others who are high in both competence and warmth (Cuddy et al., 2011; Smith, 2000; Weiner, 1986).

*“I definitely want them to be competent. If they're not competent, I don't care if they're a warm and friendly because then they're a, you know, a friendly fool. I want a friendly, competent person.” – [Jamie]*

One participant supported the criticalness of assessing competence in the selection phase, more so than warmth, in that competence is an attribute in a supervisor that a student has no control over. However, positive functioning of interpersonal supervisory relationships associated with warmth, may be changed over time with the student's input.

*“I would say competence is more important because this is something that I cannot change. If my supervision at the first stage does not work, we do not cooperate, than ideally, we can change it. I can change my life now, the way that I work. I can change my attitude. But about whether my supervisor is competent or not I cannot do anything. Competence is more important than the warmth is.” – [Anton]*

Mature students, especially those who hold significant industry work experience, desired a supervisory relationship which mimics more of a co-working mentorship, or that of a 'critical friend' (Denicolo, 2004). The supervisor would aid in being the helping hand towards realising their own research interests. Furthermore, dependent on age, some mature students may not see the PhD as a foundation of a future career as they may be close to retirement and only pursue a PhD out of self-interest. In the case of participant Jamie and Kai, networking or future aspirations was not as important as it was for some of the younger participants. Furthermore, competence was clearly the foremost important attribute in a potential supervisor, though warmth attributes (e.g. friendliness, helpfulness) were an important facet of selection.

*“I'm a little bit older, so I do have quite a bit of experience, but this is practical experience. I was looking for somebody who had academic credentials... This includes publications, research, and experience guiding students... My supervisor was very, very helpful, very instrumental... I saw their willingness to help. I saw that*

*they were engaged and that they were genuinely interested in helping me. They were just, you know, nice, friendly, helpful people, and I could see that from my initial outreach” – [Jamie]*

*“The supervisor needs to be interested in what I'm studying. He needs to think that it's a worthwhile line of enquiry, if you like. I think that I need to feel that they are kind of positive.. I need to be a critical friend. It's an overused phrase, but it's quite a good one. [...] I'm not trying to build an academic network. I'm not trying to make connections that are going to put me in good stead over a long career... It's not a career building exercise. I don't have any grand plans for what comes only out of interest” – [Kai]*

Beyond the gatekeeping attributes, in the selection phase competence is considered king (i.e. a deal-breaker) with warmth as a cherry on top, a desirable extra. The following theme discusses the specific role of supervisors' profiles in shaping impressions within the selection phase.

#### ***4.5 Profiles, a Good Starting Point for Impression Formation***

Staff university profiles were perceived as important starting points in the selection of supervisors, especially for narrowing options efficiently with regards to research alignment. This is supported by Zoe, *“I think the profile is very useful for the new student to choose your supervisors, because the only thing that we know is from their profile,”* and by Maya, *“I read through every marketing staff's profile [...] I made an Excel sheet to compare the supervisors, their publications, their area of interest etc.”* Profiles were also regarded as an informative medium for assessing competence, as they generally include publications records, qualifications and job title. However, many participants noted a suspicion that profiles were not well updated and therefore competence impressions based on articulated activities were taken with a pinch of salt. This is exemplified in the following quote.

*“The profile is important, [but] because the profile on the university website is not really updated or accurate, it is just one of reflection of the competence of the supervisor or their research interests.” – [Anton]*

Importantly, participants understood the limitations of profiles in gaining an overall impression of a supervisor and particularly with regards to warmth. Thus, in short-listing potentials they engaged in additional information search on other platforms (e.g. lectures on YouTube, LinkedIn, Twitter, and even Facebook accounts) as well as assessing future pre-application communications by email or in a meeting. Exemplified below;

*"It would be good if they shared more information about their achievements and their working style. But I would never take that for granted. I will talk to them"* – [Anton]

*"I would say that probably some of the university profiles were a bit dry, not as exciting and nice, they seem a little disconnected. That's why I go to LinkedIn, because that has relation to the rest of the world. It has the same format as anybody else has. So I know where to look for things, for recommendations, for connections, for links, and also has sections like, you know, social activism and interests and hobbies."* – [Jamie]

Jamie states that profiles are dry and turns specifically to LinkedIn where there is richer information, especially cues for warmth such as evidence of social activism, interests and hobbies. Profile photos were widely discussed by participants to be important impression formation stimuli. This is supported by prior work upholding the influence of social media profile photos on their audience (Vogel & Rose, 2017; Weisbuch et al., 2009). Specifically, participants used profiles photos to glimpse a supervisor's personality to assess warmth, hence Zoe's comment, *"I was happy when I could see a picture and this person looked like a friendly person."* However, too formal business-like profiles photo were generally not preferred, neither were those that were very informal, suggesting a careful balance is needed, exemplified by Demi, *"obviously not funny professional photos but not you know like really formal photos as well."* Again, underpinning this need for balance were stereotypes of warm individuals being perceived as lower in competence and vice versa (Fiske, 2018).

Notably, though profiles were discussed as limited for impression formation, many participants stated their primary purpose for an applicant is to assess research alignment and to an extent competence, additional insight was gained from the profile writing task. As discussed, participants wrote a profile before the interview imagining they were an Assistant Professor/Lecturer and they wanted to attract PhD students. These profiles were reviewed by

the research team, who came to the consensus that written profiles mirrored the general norms of profiles, presenting their research interest, publications and achievements focusing very much on projecting competence. However, when asked at the end of the interview if they would amend their profile, many participants expressed they would make changes to make their profile appear warmer. Specifically, they would change from third to first person, present more humbly, provide details of their general interests and ensure it does not read like a CV.

## **5 Discussion**

Business and management schools are increasingly focussed on expanding their PhD programmes and ensuring admissions of high calibre students. Student-led supervisor selection is a prominent method of allocating supervisors within Business Schools, particularly in the UK where it is actively encouraged by institutions. With a plethora of potential supervisors across a wealth of business schools, student-led selection is a challenging and involved process. We provide the first focussed examination of student-led selection, shedding light on why students choose to pursue supervision by certain supervisors and not others, impacting on programme admissions. Specifically, we provide an initial exploration of the role of warmth and competence impressions in shaping supervisor selection and the function of online University staff webpages within this. We offer four contributions.

### ***5.1 Research Contributions***

First, we provide analysis of the comparative importance of competence and warmth impressions (i.e. the Big Two) in shaping supervisor selection, this is summarised in Figure 1. Our data supports that applicants first narrow their search based on research alignment (theory and/or methods) and in many cases also University attributes (e.g. prestige and location). Within this narrowed set, competence and warmth impressions are key deciding factors of who to pursue. Such impressions are sought through multiple sources including, university profiles, social media (e.g. LinkedIn, Twitter, YouTube), emails and conversations, and are cued through a vast variety of information including language (e.g. first vs. third person and humbleness), number of publications, job title, awards, and appearance in photos, among others. The process of gathering impressions through multiple

sources and cues is similar to that found in recruiting job candidates (Llama et al., 2012; Sameen & Cornelius, 2015) and online dating (Lutz & Ranzini, 2017).

*Insert Figure 1 Here*

Our data reveals competence impressions as king with perceptions of warmth as a desirable extra (i.e. a cherry on top). Fundamentally, students would rule out those who they did not deem as adequately competent but continued to consider those who they perceived less warm. This is arguably a rather logical decision process, considering PhD degrees are foremost (and potentially perceived even more so prior admission) highly challenging intellectual endeavours and success is well-known to depend on the competence of the supervisor (Mainhard et al., 2009). Nevertheless, this is not to say warmth impressions are not a significant determinant of choice. We support that when faced with a pool of competent supervisors, signals of warmth, that a supervisor is more approachable and would be likely to actively help during the PhD process are favoured by students. Similarly, to the well-known product wheel in marketing (Kotler & Armstrong, 2010), warmth at the outer layer can provide a significant competitive advantage, when there is little to differentiate at inner circles (e.g. competence). We acknowledge our portrayal of hierarchy, though useful and truthful to the essence of the data is an oversimplification. All elements may contribute to decision making at any stage of narrowing options and complex balancing between attributes and impressions are likely to contribute to final decisions. For example, a student may have the choice between six competent and warm supervisors and therefore revisit university attributes (e.g. prestige) in making their choice. Furthermore, though we believe the hierarchical structure is rather universal, exhibiting preferences of balancing of warmth and competence, this will also be shaped by applicants' cultural backgrounds, upbringings, and experiences in higher education.

Our second contribution is knowledge of supervisor stereotyping based on warmth and competence perceptions during student-led selection. Research in psychology reports individuals perceived higher in competence are stereotyped as colder (Cuddy et al., 2009; Fiske, 2018). Our data further supports such typecasting for supervisors, which shapes perception over quality of supervision subsequently determining supervisor appeal (summarised in Figure 2). If perceived as very high in competence (e.g. through being a full Professor, a Director, or holding excessive publications) and little cues for warmth exist, they

are perceived colder and less likely to actively help students, in one participant's words "a machine". This stereotype for high competence/low warmth individuals of not engaging actively to help others is supported by prior work (Cuddy et al., 2007; Cuddy et al., 2011). Furthermore, if the competence portrayal is perceived as boastful, this may further exacerbate the categorising of cold. Students would not immediately exclude such high competence/low warmth supervisors from consideration as their expertise and potential to aid publication is very desirable but their appeal is reduced due to fear that they will be neglectful.

*Insert Figure 2 Here*

In contrast, supervisors that projected high levels of warmth with little cues for competence (i.e. The Friend) were stereotyped as lacking competence, with applicants worrying that they may not have the expertise, a pragmatic approach to supervision or be too friendly in a way which may be obstructive. As adequate competence is a prerequisite, those perceived as high warmth / low competence were said not to be considered further. Most appealing were those perceived high in competence and warmth (i.e. The Guru) as students predicted both a gain from the expertise/publication experience but also the supervisor would be attentive and nice to work with. To be perceived high in warmth, overcoming the stereotype associated with high competence (the primary consideration factor), supervisors would have to explicitly signal warmth in the selection phase (e.g. friendly emails, offering help). Finally, supervisors that were perceived low in both competence and warmth (i.e. The Dud) were not considered further as crucially they lacked adequate expertise/experience but were also predicted to be unhelpful during a PhD. Our data also supports emotions associated in upwards social comparison consistent with (Cuddy et al., 2011). Specifically, applicants showed some envy towards high comp/low warmth supervisors and admiration towards supervisors high in both.

A further interesting finding were important general cues for competence, specifically occupation (i.e. employment as an academic) and qualifications, were not sufficient for students to deem supervisors as competent. In essence, bar for competence was raised, with the aforementioned general cues of competence diluted when facing a pool of potentials who all hold rather equivalent qualifications and positions. However, a caveat emerged for academics employed at the highest echelon of Universities, with participants stating if an academic worked at University of Oxford or Harvard they would assume high competence, regardless of other information cues.

Third we contribute a specific understanding of the role of supervisor webpages in the student-self-selection process. These pages were seen as the primary port of call for students wishing to narrow supervisors by research alignment, and also a key resource for further shortlisting based on portrayed competence (e.g. no. of publications). Though staff profiles have been overlooked by researchers and arguably neglected to draw real strategic thought by institutions, these are crucial platforms for impression management for staff wishing to attract or at least not put off potential PhD students, see Table 2 below. Importantly, we find that profiles offer ample opportunity as a rather easy means to communicate competence. However, portraying warmth is found to be challenging, though useful at addressing negative stereotypes that stem from high projections of competence. We urge researchers and practitioners to view profiles not simply as online CVs used to populate department webpages, but as important impression management tools that deserve strategic thought.

*Insert Table 2 Here*

Lastly, we offer a list of key impression management techniques that can be enacted through staff profiles and consideration of how these can be best mobilised. Projecting competence is rather straight forward (e.g. provide details / numbers of publications, one should be wary of being overzealous so not to appear as boastful). We supervise academics wanting to show their warmth to write in the first person, provide a welcoming message for potential applicants (e.g. Happy to receive emails from prospective PhD students) and have a friendly profile photo. However, given participants had very mixed opinions with regards to jokes, informal language and articulation of personal information (e.g. hobbies) in reviewing our exemplar profiles, we propose deep consideration should be given to the suitability of such tactics. A question the supervisor should ask themselves, is what kind of supervisor-student relationships are they looking for? If they are searching for ones which are more connective rather than transactional (see Mainhard et al., 2009 on supervisory styles), then greater tactics to present warmth should be considered and vice versa. Prior research suggests that people are drawn to others who mirror their own traits (Byrne, 1971; Gehlbach et al., 2016). Furthermore, we ask supervisors to consider the impressions given off by their profiles as just one of many impression formation mediums in the selection phase. For example a supervisor may choose not to try to explicitly project warmth in their profile but do so in email communications, informal chats or a linked to their LinkedIn page or Twitter where

applicants can get a more rounded impression through the supervisors posts/tweets. Our overarching advice for supervisors is to think twice about how they form impressions on applicants, as such impressions are important in attracting the right applicants.

## ***5.2 Limitations and Future Research***

Our research benefitted from an in-depth exploration of the phenomena, appreciating from novel methods to unpack latent feelings and beliefs (i.e. the projective technique). However we acknowledge our research as exploratory and has a number of limitations, which give rise to fruitful areas for future research. First, we suggest a hierarchical relationship between gatekeeping attributes, though warmth and competence do not provide nuanced understanding on movements between points in the hierarchy (e.g. when does competence become adequately inferred). Future research should directly engage participants with hierarchical conceptualisation to get a stronger understanding of nuances in the applicants' journeys and understand the boundary conditions of the hierarchical depiction. Second, we propose that supervisors who are perceived both high in warmth and competence are the most appealing to students; further studies should test this proposition through experimental design manipulating warmth and competence portrayals on key supervisor-student relationship variables (e.g. active helping behaviours). Third, though it is apparent that cultural factors will shape impression formation of and consequence in student-selection, our research is limited in exploring this. Future explorations of key cultural differences would be advantageous. For UK institutions, cultural comparisons between European vs. Asian applicants will be especially important given the popularity of PhD study in the UK from applicants from these continents.

Our study focussed on primary (lead) supervisors. Future research should ascertain how warmth and competence impressions shape decisions of co-supervision teams, as there is potential for applicants to balance strengths and weaknesses across their supervisors team (e.g. one higher competence, lower warmth and one higher warmth, lower competence). Lastly, our data points to potential differences in the importance of warmth and competence for applicants in different management sub-disciplines, for example marketing applicants or those whose area of study is social focussed may put more weight on warmth than competence and vice versa compared to applicants in strategy or finance. Subsequent studies

should aim to unravel such potential distinctions to best inform management education strategy.

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Table 1. Summary of Interview Participants

<i>Interview</i>	<i>Participant #</i>	<i>Pseudonym</i>	<i>Gender</i>	<i>Age</i>	<i>Location</i>	<i>Subject Area</i>	<i>PhD Year</i>
1	1	Charles	M	27	GERMANY	Entrepreneurship & Innovation	2
2	5	Peter	M	30	MEXICO	Strategy	2
3	4	Anton	M	24	CHINA	Accounting & Finance	2
4	3	Kai	M	64	SCOTLAND	Strategy	2
5	2	Ruby	F	30	PAKISTAN	Strategy	2
6	73	Francesca	F	<b>N/D</b>	CANADA	Marketing Strategy	1
7	82	Jasmine	F	25	SCOTLAND	HR Management	1
8	85	Ella	F	45	ENGLAND	HR Management	2
9	63	Maya	F	24	CHINA	Marketing	1
10	61	Zoe	F	26	CHINA	Marketing	MRes
11	71	Zak	M	<b>N/D</b>	NIGERIA	HR Management	2
12	72	Leon	M	<b>N/D</b>	GIBRALTAR	Finance	1
13	64	Lily	F	41	UAE	Management	2
14	80	Hannah	F	32	PANAMA	Innovation Technology & Operations Management	2
15	62	Imogen	F	28	CHINA	Marketing	1
16	81	Jamie	M	<b>N/D</b>	UNITED STATES	Innovation Technology & Operations Management	2
17	70	Luca	M	<b>N/D</b>	CHINA	Organisational Studies	2

<i>18</i>	83	Demi	F	25	ENGLAND	Marketing Strategy	2
<i>19</i>	84	Abby	F	38	WALES	Consumer Behaviour	1

Table 2: Impression management tactics for supervisors wishing to attract PhD applicants

<i>Don'ts</i>	<i>Do's</i>
<b>Hobbies</b>	
<i>Sharing too many personal details. Too much personal information can project one as self-absorbed and thus can be off-putting to applicants.</i>	<i>Sharing a few hobbies / personal interests and explaining how they relate to academic life. This may attract students by projecting warmth. However this may repel others expecting a more transactional relationship.</i>
<b>Awards and grants</b>	
<i>Write every obtained award and grant. Long lists of information can appear boastful and intimidating to applicants. Similar, it may distract from other information such as research interests, which are valued more highly by applicants.</i>	<i>Carefully select achievements which will be of interest to potential PhD students.</i>
<b>Tone</b>	
<i>Write in the third person, or at least avoid titles (i.e. Doctor). Writing in third person (especially with titles) creates social distance between supervisor and the applicant, reducing warmth perceptions.</i>	<i>Write in the first person. If third person is required, replace titles by first names.</i>
<b>Visuals</b>	
<i>Upload a profile picture that may be perceived as too casual (i.e. inappropriate clothing or hairdo) or too serious (i.e. wearing a suit and not smiling).</i>	<i>Accompany profile with a professional picture and pay more attention to facial expressions. Further, consider videos, as these were supported as richer mediums that are beneficial for projecting warmth and personality.</i>
<b>PhD students supervision</b>	
<i>Not providing any information on past, current and prospective students</i>	<i>Provide information on past and current supervised PhD students (i.e. number of students, outcome, topics) and welcoming guidance for future PhD students</i>
<b>Humour</b>	
<i>Overusing jokes or humour that can be misinterpreted when written.</i>	<i>Waiting until first contact or using a video to display humour. Providing links to social media profiles (i.e. LinkedIn, Twitter) which facilitate warmer exchanges</i>
<b>Titles</b>	

<i>Emphasising too senior titles (i.e. Professor, Director) as it suggests a potential lack of time and dedication from the supervisor</i>	<i>As a senior academic: highlighting that enough time will be dedicated to PhD students and there will be advantages linked to seniority (i.e. experience, network)</i>
<b>Format and length</b>	
<i>Writing a long and unstructured academic profiles containing all types of information. Avoid a resume-like profile (i.e. prefer sentences to bullet points)</i>	<i>Structuring the profile with concise paragraphs, each one exploring one theme (i.e. background, research interests). Again, providing links to social media profiles (i.e. LinkedIn, Twitter...) for additional information</i>
<b>Publications</b>	
<i>Forgetting to provide or update the list of publications</i>	<i>Providing a list of publications with an easy access to the papers</i>
<b>Teaching style</b>	
<i>Forgetting to mention the teaching activities</i>	<i>Giving prospective PhD students a glimpse of your teaching style: links to lecture recordings, descriptions of the topics you teach, formats of the lectures / tutorials.</i>

*Figure 1: Hierarchy of determinants of supervisor selection by applicant*

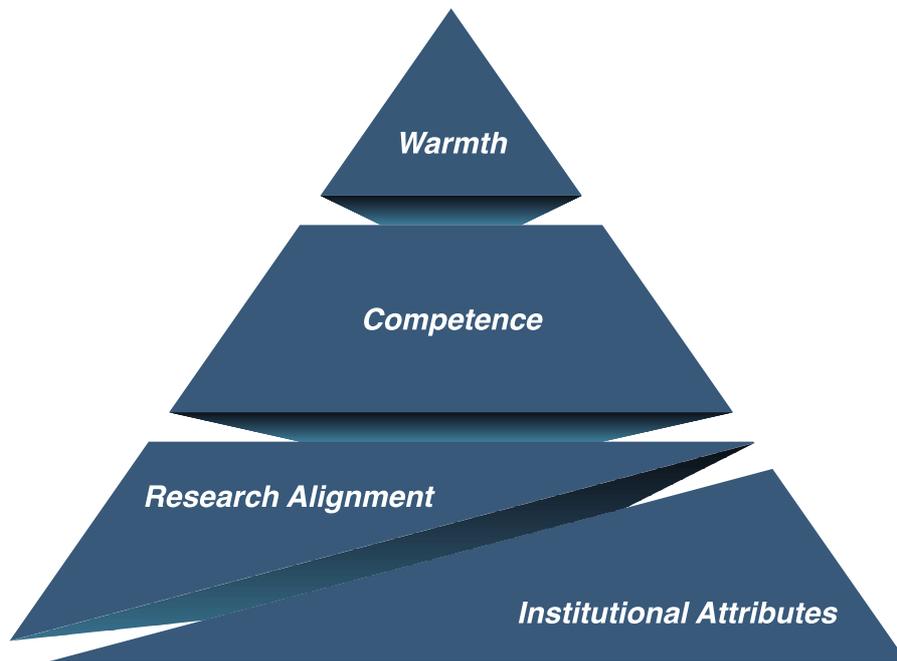


Figure 2: Typology of supervisors based on warmth and competence perceptions

	<b>Low Competence</b>	<b>High Competence</b>
<b>Low Warmth</b>	<p><b>The Dud</b> (Not appealing)</p> <p>Lower approachability, empathy Lower expertise to guide research Lower in active helping Higher likelihood to neglect</p>	<p><b>The Machine</b> (Potential appealing)</p> <p>Lower approachability, empathy Higher expertise to guide research Lower in active helping Higher likelihood to neglect Envied</p>
<b>High Warmth</b>	<p><b>The Friend</b> (Not appealing)</p> <p>Higher approachability, empathy Lower expertise to guide research Higher in active helping Lower likelihood to neglect</p>	<p><b>The Guru</b> (Most appealing)</p> <p>Higher approachability, friendliness Higher expertise to guide research Higher in active helping Lower likelihood to neglect Admired</p>