

# Managing strategic paradoxes: the influence of demographic characteristics of decision-makers

Managing  
strategic  
paradoxes

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## Abstract

**Purpose** – Together with increasing ambiguity and frequency of changes, management becomes full of seemingly conflicting choices, i.e. paradoxes, coming up in the process of decision-making. Successful management of paradoxes, i.e. treating them as “both/and” constructs leads to innovative solutions and better overall organizational performance. In response to a significant research gap regarding antecedents of managing paradoxes, the aim of the paper is to investigate how individual characteristics of strategic decision-makers, specifically their age, tenure and educational background, affect the ability to combine contradictions in their strategic choices.

**Design/methodology/approach** – An empirical study was conducted among 201 managers representing furniture companies in Poland. The CATI technique with an interview questionnaire was adopted in order to identify respondents’ opinions on the main features, traits and dimensions of the strategy implemented in their companies. Participants’ tenure, age and education were measured by single items.

**Findings** – The study suggests that the ability to manage paradoxes increases with age and tenure in a company and at a current position. At the same time economic/business educational background appears to be unsupportive in this regard.

**Originality/value** – While the issue of managing paradoxes energizes researchers in various disciplines, we still do not know much about antecedents of the process. The study shed light on effects that managers’ demographics have on their ability of managing paradoxes. It contributes to the theory on strategic paradoxes as well as theory on the influence of decision-makers’ individual characteristics on their decisions.

**Keywords** Managers, Paradox, Strategic choices, Individual characteristics

**Paper type** Research paper

## 1. Introduction

Paradoxes are explored by scholars representing variety of disciplines, including psychology (Harris, 1996), philosophy (Schneider, 1990) and to growing extend organizational studies (e.g. Cameron and Quinn, 1988; Lewis, 2000; Smith, 2014). In the latter field, the paradox is defined as contradictions embedded within statements, human emotions, perspectives, demands, identities, interests or organizational practices (González-González *et al.*, 2019; Murnighan and Conlon, 1991; Eisenhardt and Westcott, 1988). Organizational actors construct them in order to make sense of increasing ambiguity and frequency of changes, by simplifying reality into polarized “either/or” distinctions (Lewis, 2000). However, paradoxes are individually or socially constructed masks of simultaneously existing truths. Unlike dilemmas representing true “either/or” choices, paradoxes signify two sides of the same coin (Lewis, 2000).

Organizational life is full of paradoxes. Organizational members are expected to care of quality and costs, combine dependence with autonomy, use reasoning and imagination, and merge stability with change (Glinka and Hensel, 2017; Beer, 2009; Gittel, 2000; Lewis, 2000; Manz and Angle, 1986). Since the early concepts created in management science, such competing demands have been considered as subjects of choice that has to be made by



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managers and then consistently implemented in an organization (Smith, 2014). In contrast, recent studies in the field indicate the growing pressure on managers to address multiple, competing options simultaneously, namely: to manage paradoxes (Smith, 2014; Smith *et al.*, 2010).

Paradoxes specifically reflect tensions which coexist and persist over time in strategic decision-making (Lewis, 2000). They refer to variety of problems that have to be reconciled in the process, such as globalization vs local adaptation (Berchtold *et al.*, 2010), maximizing profits vs improving social welfare (Margolis and Walsh, 2003), planned vs emergent strategy creation (Mintzberg, 1985), inductive vs deductive approach (Regnér, 2003) or endogenous vs exogenous perspective (Dameron and Torset, 2014).

Large body of research is devoted to analyze antecedents of managing strategic paradoxes. Many authors refer to the environment uncertainty that intensifies paradoxes and requires higher adaptability through dealing with them (Cao, 2011; Eroglu and Hofer, 2014; Lewis, 2000; Zakrzewska-Bielawska, 2018). On the other hand, because it is all about making choices by managers, their individual traits should be treated as antecedents or moderators of the process first of all (Lubatkin *et al.*, 2006; Smith and Tushman, 2005). However, there is a significant research gap regarding managers' individual characteristics determining their ability of managing paradoxes.

Therefore, the aim of this paper is to identify how individual characteristics of managers influence their ability of managing strategic paradoxes, notably, the level of combining contradictions in their declared strategic choices. On the basis of upper echelon theory (Hambrick and Mason, 1984) and studies on expert performance (Dew *et al.*, 2009), we focus on managers' demographics and hypothesize that managing paradoxes is determined by educational background, age as well as tenure in a company and at a current position.

An empirical study was conducted on a sample of 201 respondents representing companies of the furniture industry in Poland. We selected one specific industry in order to control external factors of decision-making and treat them as homogeneous.

Our study contributes to the literature in two general ways. First, our study contributes to the theory on paradoxes embedded in strategic decisions. Second, it develops theory on the influence of decision-makers' individual characteristics on their decisions. Specifically, we shed light on effects that managers' age, tenure and educational background have on their ability of managing paradoxes.

In this paper, we present, respectively, the theoretical background on managing strategic paradoxes in organizations and antecedents of this process, hypotheses development, the methodology of our study, its results and the discussion followed by implications for further research and practice.

## 2. Theoretical grounding

### 2.1 Managing paradoxes in strategic choices

Strategy is about making choices (Porter, 1996). As environment becomes more complex, dynamic and unpredictable, company's strategy must reflect this dynamism, and its decisive process should be flexible (Cao, 2011; Eroglu and Hofer, 2014). Therefore, strategic decisions-makers have to manage more and more contradictions, pursue opposite goals and reconcile tensions that appear between contradictory approaches (Besharov and Smith, 2014; Dameron and Torset, 2014; Hoskisson *et al.*, 1999; Magnusson and Martini, 2008). Paradoxes in strategic management become so omnipresent that managing them turned out to be the obligation, function and challenge for decision-makers (Dameron and Torset, 2014; Smith and Tushman, 2005). In practice it means that managers must accept and balance between contradictory solutions (De Wit and Meyer, 2005; Smith and Lewis, 2011). Tensions created

by paradoxes inspire to rethink polarities and recognize more complex interrelationships (Lewis, 2000). Therefore, managing paradoxes stands for capturing their enlightening potential (Lewis, 2000) and recognizing their power to generate creative insight and change (Eisenhardt and Westcott, 1988). It is about accepting inherent nature of paradoxes and learning to work with them (Lüscher and Lewis, 2008), combining contradictions into novel synergies (Eisenhardt and Westcott, 1988). Paradoxical management should be adopted as a pattern of decisions over time rather than reactions to individual problems (Lewis, 2000; Smith, 2014). Managers who cope effectively with paradoxes have abilities to spur innovations because they perceive and understand variety of opportunities and aims being seemingly in conflict (Mom *et al.*, 2009; Purvanova and Kenda, 2018).

In the field of strategic management, dealing with paradoxes is referred particularly to as strategic ambidexterity (Popadić and Milohnić, 2016; Raisch *et al.*, 2009; Zakrzewska-Bielawska, 2018). The term of ambidexterity itself was used for the first time in management by Duncan in 1976 who adopted it in reference to organizations building dual structures enable to govern activities that require variety of competences and different time horizons (Duncan, 1976). Following that, March in 1991 argued that in order to maintain long term profitability, contemporary companies should both explore new opportunities and exploit current capabilities (March, 1991). Capacity of a company to balance these two seemingly contradictory approaches, i.e. exploration vs exploitation, has been labeled as ambidexterity (Gibson and Birkinshaw, 2004; Tushman and O'Reilly, 1996) analogously to human ability to operate with both hands with equal effectiveness (Rosing *et al.*, 2011). Strategic ambidexterity has been proved to bring better results than “traditional” strategic approaches by increase in sales, innovativeness, market value and various other performance indicators (Tushman *et al.*, 2010; O'Reilly and Tushman, 2013; Smith, 2014; Zakrzewska-Bielawska, 2018).

Diversity of possible paradoxes in strategic management allow to build a theoretical multidimensional framework of possible strategic choices (Zakrzewska-Bielawska, 2018). Such complex model has been proposed by de Wit and Meyer (1998, 2005). They described strategic paradoxes in relation to three main dimensions of strategy: strategy process, strategy content, strategy context. For each dimension they assigned a number of areas accompanied by paradoxes that may occur (see Table 1), deriving them from strategic management literature (e.g. Ansoff and McDonnell, 1990; Barney, 1991; Mintzberg, 1994; Porter, 1985; Simon, 1987).

There are very few empirical studies based on the concept of de Wit and Meyer (e.g. Lucian *et al.*, 2008; Urbanowska-Sojkin, 2016). Therefore, together with treating the framework as very comprehensive, we have found it worth of verifying in our study.

Dimensions of strategy	Stages/levels/aspects	Paradoxes
Strategy process	Strategic thinking	Logic ↔ Creativity
	Strategy formation	Deliberateness ↔ Emergence
	Strategic change	Revolution ↔ Evolution
Strategy content	Business Level Strategy	Markets ↔ Resources
	Corporate Level Strategy	Responsiveness ↔ Synergy
	Network Level Strategy	Competition ↔ Cooperation
Strategy context	Industry Context	Compliance ↔ Choice
	Organizational Context	Control ↔ Chaos
	International Context	Globalization ↔ Localization

Source(s): De Wit and Meyer (2005)

**Table 1.**  
Paradoxes in the strategy-making process

## 2.2 Antecedents of managing strategic paradoxes

There are various possible external and internal, i.e. organizational, antecedents of managing paradoxes. The former ones refer particularly to the environment uncertainty that is characterized by dynamism, intensity, unpredictability and high frequency of changes (Cao, 2011; Eroglu and Hofer, 2014). Uncertainty reveals paradoxes, intensifies them and requires higher adaptability (Lewis, 2000; Zakrzewska-Bielawska, 2018). Internal antecedents are definitely less studied (Kostopoulos and Bozionelos, 2011; Lubatkin *et al.*, 2006; Gibson and Birkinshaw, 2004). Most of all, they refer to top managers, their characteristics and individual dispositions which are treated as antecedents or moderators of successful combining paradoxes in decision-making (Lubatkin *et al.*, 2006; Smith and Tushman, 2005; Chang and Hughes, 2012; Mom *et al.*, 2009). The research in this regard is still distracted though. Some authors argue that the more risk tolerant and adaptable managers are, the more likely strategic ambidexterity is (Chang and Hughes, 2012; Li *et al.*, 2015). De Visser and Faems (2015) investigate how CEOs' cognitive styles affect their exploitative and explorative innovation behaviors. Others refer to multitasking and effectiveness in both acquiring and exploiting knowledge (Mom *et al.*, 2009) or cognitive efforts moderated by managers' conscientiousness and openness (Keller and Weibler, 2014). Nevertheless, there is still a significant gap in management studies regarding individual characteristics of managers that correlate with their ability of managing paradoxes followed by call for research in this regard (Gupta *et al.*, 2006).

In our study we focus on demographics' impact on managers' ability for managing paradoxes. We base our approach both in upper echelon theory (UET) and studies on expert performance.

Upper echelon theory (Hambrick and Mason, 1984) states that organizational outcomes, including strategic choices, can be predicted by managerial characteristics such as age, tenure and education. These characteristics are treated as indicators of individuals' cognitive base, developed as a result of experience and training (Bantel, 1993). Hereby, we answer to the call for research that goes inside the "black box" of the upper echelons (Carpenter *et al.*, 2004; Goll and Rasheed, 2005; Sperber and Linder, 2018). The call is due to still unclear picture on how the aforementioned managers' characteristics shape company performance (Papadakis and Bourantas, 1998; Denis *et al.*, 2001; Carpenter *et al.*, 2004; Forbes, 2005b; Damanpour and Schneider, 2006; Finkelstein *et al.*, 2009; Curseu and Louwers, 2010).

UET suggests that demographics are easier to both observe and measure (Sperber and Linder, 2018; Goll and Rasheed, 2005). Although there is a move away from the studies on demographic characteristics as proxies of managerial performance to more complex constructs, such as cognitive styles and values (e.g. De Visser and Faems, 2015; Sperber and Linder, 2018), a need remains to show how and why observable managers' characteristics influence their cognitions and behaviors (Sperber and Linder, 2018; Carpenter *et al.*, 2004; Forbes, 2005b; Goll and Rasheed, 2005). We argue that while managers' ability to connect seemingly contradictory choices in their strategic decisions improve company outcomes, the ability itself can be explained by managers' demographic characteristics.

On the other hand, a rationale for hypotheses on managers' demographics as factors of their performance can be derived from studies on experts. Based on the literature review on strategic paradoxes (e.g. Besharov and Smith, 2014; Dameron and Torset, 2014; Smith and Tushman, 2005), we assume the ability to manage paradoxes as valuable and desired competence of managers, i.e. the indicator of their expertise. Our assumption is in line with studies on experts. Experts, but not novices, frame decision problems using an effectual logic, i.e. they are likely to see contingencies as opportunities to achieve new effects (Dew *et al.*, 2018; Sarasvathy, 2001; Wiltbank *et al.*, 2006). They are better at identifying exceptions, adapting to them and generating new strategies (Shanteau, 1992; Weisberg, 2006). They tend to solve the problems holistically and integrate various concepts and principles in meaningful ways

(Chi, 2006; Feltovich *et al.*, 2006; Gitomer, 1988). Experts are also more likely to make continuous adjustments in their initial strategies (Einhorn and Hogarth, 1981) and to use new information, even if it is inconsistent with their knowledge (Fiske *et al.*, 1983; Lanseng and Sivertsen, 2019). Novices, in contrast, often follow well-established rules and are more likely to be inflexible (Bilalić *et al.*, 2008; Davies, 1991; Shanteau and Phelps, 1977).

Strong-form expertise is “associated with deep personal ability and knowledge derived from extensive practice and experience based on immersion in the relevant domain” (Dew *et al.*, 2009, p. 289). Although the number of years of work experience is not always a good predictor of performance (Ericsson and Lehmann, 1996; Sonnentag and Volmer, 2009; Dew *et al.*, 2009), higher levels of experience have been positively associated with age (Sandberg and Hofer, 1987; Sapienza and Grimm, 1997; Finkelstein *et al.*, 2003; Buhr and Dugas, 2006) and educational background in a domain (Kuehnhanss *et al.*, 2015).

Therefore, we hypothesize that age, tenure and professional education are predictors of managers’ disposition to connect contradiction in their strategic decisions. The latter is referred to the level of combining contradictions in strategic choices declared by managers (Clegg *et al.*, 2002).

### 2.3 Hypotheses development

**2.3.1 Decision-makers’ age.** Many studies show that executives’ age affect their decisions and company outcomes (Belenzon *et al.*, 2019; Finkelstein *et al.*, 2009; Hambrick, 2005; Forbes, 2005b; Goll and Rasheed, 2005). The overall assumption is that managers’ youth is associated with company growth and higher performance. Specifically, it is argued due to lower risk aversion of younger managers (Belenzon *et al.*, 2019; Serfling, 2014), their higher aspirations related to the earlier stage of lifespan (Naidenova *et al.*, 2015; Ebner *et al.*, 2006; Forbes, 2005b), and higher acceptance of strategic change correlated with lower commitment to their organization’s status quo (Finkelstein and Hambrick, 1990; Goll and Rasheed, 2005). However, the aforementioned attitudes are likely to lead to more aggressive behaviors of young managers on a market, and thus lower survival of their firms (Belenzon *et al.*, 2019). Young CEOs are more likely to exit from business, and their firms exhibit more variation in growth rates (Belenzon *et al.*, 2019).

Theory of strategic paradoxes states that company growth comes, among others, from simultaneous expanding the current business and exploiting new opportunities (Tushman *et al.*, 2010; O’Reilly and Tushman, 2013; Smith, 2014; Zakrzewska-Bielawska, 2018). Older managers are able to rely on their experience allowing them to choose new projects with higher probability of success and at the same time they act in order to ensure survival and sustainable growth of their firms (Belenzon *et al.*, 2019). They also seek more information, are less confident and more equivocal about decisions which they make in more deliberate and careful manner than youngsters (Taylor, 1975; Forbes, 2005a, b; Goll and Rasheed, 2005). Overconfidence has been observed among younger managers and argued to be the factor of their riskier decisions with less probability to success. With age, also ambiguity tolerance rises (Buhr and Dugas, 2006) leading to perceiving ambiguous situations, e.g. paradoxes, as desirable, challenging and interesting (Furnham and Ribchester, 1995).

All in all, we hypothesize:

*H1.* Older managers are disposed to connect contradictions more often than younger ones.

**2.3.2 Decision-makers’ tenure.** Age is usually associated with a tenure. However, tenure is argued to influence performance in its specific way related to the experience a manager has in the domain (Sperber and Linder, 2018; Goll and Rasheed, 2005). For example, longer tenure leads to managers’ greater commitment to organizational status quo (Finkelstein and

Hambrick, 1990). However, some studies also suggest tenure to trigger innovation implementation (Damanpour and Schneider, 2006; Sperber and Linder, 2018). It is due to legitimacy, knowledge and skills accompanying managerial experience that allow managing political processes, integrating innovations into organizational routines and facilitating its use. In other words, longer tenure is supposed to support managing the paradox of innovation vs status quo. Longer tenure may correlate with managers' working together for longer time and therefore enable them to generate interactional mechanisms supporting participative consensus-seeking decision-making that can reconcile seemingly contradictory approaches (Goll and Rasheed, 2005). Domain-relevant experience enable managers to gather and process information quicker and more efficiently which leads to faster decision-making (Forbes, 2005b) due to possessing frameworks facilitating storage, recall and interpretation of data (Lord and Maher, 1990). Experience level has been proved to affect accuracy of data used in decision-making (Fisher *et al.*, 2003) because of increased alertness to errors, sensitivity to omissions and subtle contextual differences, ability to identify relevant problems and attend to greater amounts of knowledge (Sanbonmatsu *et al.*, 1992; Klein *et al.*, 1997; Payne *et al.*, 1993). Studies show that managerial experience measured with tenure increases the quality of data processing (Fisher *et al.*, 2003) and serves as predictor of effective fund performance (Naidenova *et al.*, 2015). Therefore, we hypothesize:

H2. Managers with longer tenure, both in the company and at their current position, are disposed to connect contradictions more often than those with shorter tenure.

**2.2.3 Education.** The aforementioned benefits of experience may correlate with domain-specific knowledge (Morrow *et al.*, 1992). Domain-specific knowledge is a critical factor of information processing, making managers more familiar with sources of information relevant for the domain and thus more efficient in gathering relevant information (Fisher *et al.*, 2003; Forbes, 2005b; Papadakis and Bourantas, 1998). Highly educated managers use complex and diverse approaches to decision-making and are argued to achieve higher returns at lower risk exposures (Lee *et al.*, 2005; Damanpour and Schneider, 2006; Naidenova *et al.*, 2015). Education can make people be more aware of judgmental heuristics and biases (Forbes, 2005a), and enhances their ambiguity tolerance and integrative complexity, i.e. the ability to integrate easily across diverse options (Bantel, 1993; Goll and Rasheed, 2005). Education background is seen as predictor of innovations' receptivity (Sperber and Linder, 2018; Goll and Rasheed, 2005).

Most of the previous research focus on a level of education of managers and its impact on decision-making (e.g. Curseu and Louwers, 2010; Gottesman and Morey, 2006; Goll and Rasheed, 2005). However, there are studies referring to specific, i.e. professional management education (Naidenova *et al.*, 2015; Gottesman and Morey, 2006). They point out that professional education provides managers with special knowledge, e.g. analytic techniques of decision-making as opposed to more risk-prone idiosyncratic judgments of "self-made" executives. Therefore, we hypothesize:

H3. Individuals educated in economics/business are disposed to connect contradictions more often than those educated in other fields.

### 3. Research design and study procedure

#### 3.1 Method

The study was a part of a larger ongoing research project regarding effects of group dynamics and individual characteristics of decision-makers on strategic decisions in companies. The aim at this stage of the project was to identify respondents' individual characteristics and their opinions on the main features, traits and dimensions of the

strategy implemented in their companies, measured with [de Wit and Meyer \(1998, 2005\)](#) framework of strategic paradoxes (see 3.3. Measures). Results of the following stages of the project encompass in-depth analyses of decision-makers' teams and are not relevant for this paper. The study was carried out between March and September 2018 with an interview questionnaire and the CATI technique (Computer Assisted Telephone Interview) which is recommended for hard-to-reach respondent groups, such as managers ([Smith and Albaum, 2012](#)). Our choice of quantitative approach resulted primarily from the aim of the study, specifically, the need to verify the hypotheses considering links between selected individual characteristics of managers and their declarations regarding connecting strategic paradoxes.

### 3.2 Participants

Research on managers' characteristics and their impact of organizational outcomes suggest that the effect is moderated by external factors, such as industry dynamism ([Belenzon et al., 2019](#)). Therefore, in order to exclude differentiated impact of external factors and maintain the assumption of their relative homogeneity, we decided to conduct the research in one industrial sector. It was supposed to have a significant variety of company strategies implemented in the sector. After a preliminary analysis, we chose the furniture industry which had been considered as one of the major drivers of the Polish economy ([Smardzewski, 2009](#)). In 2016, Poland was the fourth (in terms of value) and the second (in terms of volume) exporter of furniture worldwide ([International Expansion of Polish Furniture Industry, 2018; Rynek meblarski..., 2017](#)). The sector brings around 2% of the Polish GDP ([Condition and prospects. . . , 2017; International Expansion of Polish Furniture Industry, 2018](#)). It is also one of the largest employers in Poland and its companies implement diverse corporate strategies ([Condition and prospects. . . , 2017](#)).

Taking into account the aims of the overall research project, i.e. the group dynamics in strategic decision-making teams, we conducted research only in large and medium sized companies, assuming that team decision-making might be rare in small organizations. According to different data, in Poland within a period of 2017–2018 there were about 25,000–27,000 furniture manufacturers ([Polish furniture industry..., 2018; Record year. . . , 2017](#)). In 2017 the vast majority of them were micro- (over 22,000) and small-sized enterprises (approx. 1,500). 407 large and medium-sized companies operating in the sector accounted for three-quarters of its total production ([Polish furniture industry..., 2018; Record year. . . , 2017](#)).

We conducted our research in 201 companies, i.e. in nearly half of the population of large and medium-sized companies of the sector. They were selected in non-random sampling with the assumption that the sample structure should reflect the structure of large and medium-sized enterprises in the target population. As the result the research sample consisted of 175 medium-sized companies (87.1%) and 26 large companies (12.9%).

The respondents were purposely selected from among managerial staff who were responsible for making strategic decisions in the investigated companies, i.e. they were company presidents, general directors, chief executives, chairmen of the board, board members, company owners and co-owners. [Table 2](#) presents a summary of participant characteristics.

There were only three respondents whose tenure was shorter than four years and no respondents at the age of 50–59 or below 31, so these groups were excluded from analyses.

### 3.3 Measures and variables

**3.3.1 Strategic paradoxes.** In order to tap multidimensional framework of possible strategic paradoxes we used the theoretical framework of [de Wit and Meyer \(1998, 2005\)](#). This resulted in 20 items in form of pairs of contradictory statements reflecting opposing strategic choices. For instance, "logic vs creativity" was represented by statements (items): "In strategic

Criterion	Percent
<i>Gender</i>	
Female	27.4
Male	72.6
<i>Age</i>	
Up to 30 years	–
31–39 years old	25.9
40–49 years old	49.2
50–59 years old	–
60 years old and more	24.9
<i>Education</i>	
Economic education	47.8
Noneconomic education (technical, humanities, other)	52.2
<i>Tenure in the company</i>	
Up to 3 years	1.5
4–10 years	31.8
11–20 years	51.3
More than 20 years	15.4
<i>Tenure at the current position</i>	
Up to 3 years	1.5
4–10 years	39.8
11–20 years	43.8
More than 20 years	14.9

**Table 2.**  
Summary of  
respondents  
characteristics  
(*n* = 201)

management, analyses, calculations and rationality are the most important” vs “In strategic management it is the most important to use intuition, imagination and emotions”, while “compliance vs choice” was represented by: “Our success depends on adopting to the industry patterns” vs “Our success depends on our individual choices: we differentiate ourselves from the industry and create new patterns.” All items are presented in the [Appendix](#).

The nature of items that referred to contradictions did not allow establishing construct validity and reliability through exploratory or confirmatory factor analysis.

The idea of the study was to investigate what decision-makers think and declare about their specific strategic choices, therefore we used a five-point Likert-type agreement scale (from *Strongly disagree* to *Strongly agree*), assuming its clarity for respondents (Colman *et al.*, 1997; Cox, 1980; Miller, 1994).

**3.3.2 Level of combining contradictions.** The dependent variable of the study was the level of combining contradictions in strategic choices declared by respondents, assumed as the indicator of their disposition to manage paradoxes (Clegg *et al.*, 2002). We will refer to this variable as LCC. We operationalized it as the level to which respondent opinions about contrary strategic choices matched. We measured LCC by calculating the absolute difference between respondents’ answers to two opposite items, e.g. “Our actions result from our strategy” vs “Our strategy results from our actions” (see *Step 1* in [Table 3](#)). If a person answered to both items with the same answer, e.g. Agree, the difference totaled 0. This meant the highest LCC. If a person answered to one item with Strongly agree and to the other with Strongly disagree, the difference totaled 4 (5–1 = 4), i.e. the lowest LCC. The lower the difference, the higher the LCC. We calculated LCC for every respondent and every pair of contrary items in order to analyze differences between groups of decision-makers (see *Step 2* in [Table 3](#)).



**3.3.3 Demographics.** We measured participants' age, tenure and education by single items. The questionnaire requested respondents to indicate their age among the five age groups specified in the survey, namely: *less than 30 years*, *30–39*, *40–49*, *50–59* and *60 years and above*. Such a practice is common in similar analysis (see, for example, Kabacoff and Stoffey, 2001). We measured age following UN recommendation to use ten-years groups (United Nations, 1982, p. 2), adjusting the groups in a way that allowed us reference to generation classification BB-X-Y-Z (The Center for Generational Kinetics, <https://genhq.com/FAQ-info-about-generations/>): *up to 30 years old*, *31–39 years old*, *40–49 years old*, *50–59 years old*, *60 years old and more*. In order to measure tenure in the company and at a current position, we used ranges derived from Vásquez-Torres (2017), adjusted to Polish conditions according to data derived from The Central Statistical Office (<https://stat.gov.pl/>): *up to 3 years*, *4–10 years*, *11–20 years*, *more than 20 years*. The education background was categorized as *economic/business* and *other*, including options such as *technical* (sectorial profile), *technical* (non-sectorial), and *humanistic*.

#### 4. Results

Because independent variables were nominal and the statistical distribution of the dependent variable was not close to normal in any of groups, we used nonparametric methods (Kruskal–Wallis *H* and Mann–Whitney *U*) to test our hypotheses. The general goals of performing these analyses are presented in Table 3 (Step 3 and 4).

##### 4.1 Age

The age of respondents was associated with relatively many significant differences in LCC. To simplify, we will refer to age groups as: *the youngest* (31–39 years old), *middle* (40–49 years old) and *the oldest* (more than 60 years old). The average LCC was higher in older groups, i.e. older respondents connected contradictions more often than younger. The difference in this aspect was significant between the oldest and the youngest group ( $U = 945, p = 0.017$ ). Additionally, significant differences appeared in case of four specific pairs of sentences presented in Table 4. The pattern was the same in all cases: the oldest group had the highest LCC, the youngest group – the lowest. This supports Hypothesis 1 stating that older individuals are disposed to connect contradictions more often than younger ones.

##### 4.2 Tenure in a company

We will refer to groups with tenure of 4–10 years, 11–20 years and above 20 years as *short*, *middle* and *long tenure*, accordingly. The average LCC increased with tenure in a company but the effect was nonsignificant ( $H = 5.16, p = 0.076$ ). There were significant effects in two pairs of sentences presented in Table 5. These effects are in line with Hypothesis 2 stating

Step	Action	Result
1	Calculation of absolute differences between respondents' answers to contrary items	LCC for every pair of items
2	Calculation of the average difference for every respondent	The general LCC of a given respondent
3	Kruskal–Wallis one-way analysis of variance and Mann–Whitney <i>U</i> test	The effect of age/education/tenure on the general LCC
4	A series of Mann–Whitney <i>U</i> tests	Effects of age/education/tenure on LCC for given paradoxes

**Table 3.**  
The schema of data analysis

Paradox	Statements	Compared age groups	Test
Logic vs Creativity	In strategic management, analyses, calculations and rationality are the most important In strategic management it is the most important to use intuition, imagination and emotions	The youngest vs middle The youngest vs the oldest	$U = 2,037$ , $p = 0.027$ $U = 770.5$ , $p < 0.001$
Deliberateness vs Emergence	In our company strategic plans are not necessary to start acting Before we act, we always have a strategic plan ready	The youngest vs the oldest	$U = 1,012$ , $p = 0.044$
Markets vs Resources	The main factor determining our activities is the specificity of the environment (we analyze external opportunities and threats and adapt to them internal resources) The main factor determining our activities is the specificity of our resources (we are focused on our strengths and weaknesses)	The youngest vs middle The youngest vs the oldest	$U = 1,921$ , $p = 0.007$ $U = 832$ , $p < 0.001$
Competition vs Cooperation	In our activities, we remain independent of other market players (competitors, suppliers, customers) In our activities, we closely cooperate with other market players (competitors, suppliers, customers)	The youngest vs the oldest The middle vs the oldest	$U = 996$ , $p = 0.032$ $U = 1971.5$ , $p = 0.034$

**Table 4.**  
Differences between age groups

Paradox	Statements	Compared tenure groups	Test
Logic vs Creativity	In strategic management, analyses, calculations and rationality are the most important In strategic management, it is the most important to use intuition, imagination and emotions	Middle vs long	$U = 1149.5$ , $p = 0.012$
		Short vs long	$U = 611.5$ , $p = 0.001$
		Short vs middle	$U = 2,964$ , $p = 0.250$
Markets vs Resources	The main factor determining our activities is the specificity of the environment (we analyze external opportunities and threats and adapt to them internal resources) The main factor determining our activities is the specificity of our resources (we are focused on our strengths and weaknesses)	Short vs long	$U = 727.5$ , $p = 0.026$
		Long vs middle	$U = 1,390$ , $p = 0.246$
		Short vs middle	$U = 2,890$ , $p = 0.158$

**Table 5.**  
Differences between groups of tenure in a company

that individuals with longer tenure in the company are disposed to connect contradictions more often than those with shorter.

#### 4.3 Tenure at a current position

Label *short*, *middle* and *long* refer to the same time ranges as for tenure in a company. The average LCC increased with the increase of tenure at a current position. The long tenure group had a significantly higher frequency than the short tenure group ( $U = 791.5$ ,  $p = 0.006$ ). There were significant differences in three single paradoxes presented in Table 6. They are all

**Table 6.** Differences between groups of tenure at a position

Paradox	Statements	Compared tenure groups	Test
Logic vs Creativity	In strategic management, analyses, calculations and rationality are the most important In strategic management, it is the most important to use intuition, imagination and emotions	Middle vs long	$U = 949,$ $p = 0.014$
		Short vs long	$U = 731.5,$ $p = 0.001$
		Short vs middle	$U = 3.121,$ $p = 0.182$
Deliberateness vs Emergence	In our company, strategic plans are not necessary to start acting Before we act, we always have a strategic plan ready	Short vs long	$U = 877,$ $p = 0.023$
		Short vs long	$U = 2.887,$ $p = 0.035$
		Middle vs long	$U = 1.195,$ $p = 0.416$
Markets vs Resources	The main factor determining our activities is the specificity of the environment (we analyze external opportunities and threats and adapt to them internal resources) The main factor determining our activities is the specificity of our resources (we are focused on our strengths and weaknesses)	Short vs long	$U = 885,$ $p = 0.025$
		Short vs middle	$U = 1.154,$ $p = 0.273$
		Middle vs long	$U = 1.154$ $p = 0.273$

in line with [Hypothesis 2](#) stating that individuals with longer tenure at their current position are disposed to connect contradictions more often than those with shorter.

#### 4.4 Education

In order to verify [Hypothesis 3](#), we categorized the respondents into two groups: those having economic/business educational background and others. It was related to a few significant differences in LCC, although the direction of this relation was contrary to [Hypothesis 3](#): respondents with economic/business education had a significantly lower LCC than respondents with non-economic education ( $U = 3,982, p = 0.01$ ). This direction was the same for four specific paradoxes included in [Table 7](#). Therefore, our study suggests that individuals educated in economics/business are less disposed to connect contradictions than those educated in other fields.

In the case of the remaining pairs, there were no significant differences.

### 5. Discussion

Managing strategic paradoxes is remarkably challenging for managers who are expected to make clear decisions and provide clear guidance for the rest of the organization ([Smith, 2014](#)). Their commitment to multiple choices can lead to ambivalence among employees and contestation between subgroups of different interests ([Glynn, 2000](#); [Pradies and Pratt, 2010](#); [Smith, 2014](#)). As the result, managers can face pressures towards choosing one strategic option, because internal structures, routines and competences support existing cognitive frames over innovations ([Gilbert, 2005](#); [Smith, 2014](#); [Tripsas, 2009](#); [Purvanova and Kenda, 2018](#)).

Our study suggests that the ability to manage paradoxes, measured with declared level of combining contradictions in strategic choices may be determined by managers' age, tenure as well as by their educational background. While our hypothesis regarding the age and tenure are supported by the study results, the influence of the educational background appeared to

Paradox	Statements	Compared groups of different education background	Test
Logic vs Creativity	In strategic management, analyses, calculations and rationality are the most important In strategic management, it is the most important to use intuition, imagination and emotions	Economic/business vs other	$U = 4112.5$ , $p = 0.017$
Deliberateness vs Emergence	Our strategy emerges from our actions Our organization and actions stem from the adopted strategy	Economic/business vs other	$U = 4382.5$ , $p = 0.023$
Markets vs Resources	The main factor determining our activities is the specificity of the environment (we analyze external opportunities and threats and adapt to them internal resources) The main factor determining our activities is the specificity of our resources (we are focused on our strengths and weaknesses)	Economic/business vs other	$U = 4156$ , $p = 0.023$
Competition vs Cooperation	Our interactions with other market players go beyond just transactions; we build good relationships, often interpersonal We restrict our contacts and interactions with other market players to just transactions	Economic/business vs other	$U = 4273.5$ , $p = 0.049$

**Table 7.**  
Differences between groups of educational background

be contrary to the hypothesized one. Notably, the older the decision-makers were, and the longer-tenured both in a company and at a current position, the more frequently they declared connecting contradictions in strategic decisions, i.e. they matched them into “both/and” possibilities. At the same time, opposite to our hypothesis, decision-makers educated in other fields than economics or business connected contradictions more frequently.

The aforementioned findings lead to interesting conclusions that contribute to various theoretical streams.

First, the study contributes to the theory on paradoxes in management, particularly those embedded in strategic decisions. Most of the research conducted so far in the area explored selected paradoxes, e.g. exploration vs exploitation (Popadić and Milohnić, 2016; Raisch *et al.*, 2009; Zakrzewska-Bielawska, 2018). In our approach we use the popular, though rarely applied in research framework of strategic paradoxes created by de Wit and Meyer (1998, 2005). Our study identifies paradoxes most frequently dealt, i.e. combined in practice by managers. Interestingly, they refer to key issues discussed in the main stream of strategic management literature:

- (1) logic/rational activity vs creativity/intuition in strategic thinking (Andrews, 1987; Liedtka, 2000; Simon, 1987);
- (2) deliberateness/planning vs emergence/logical incrementalism in strategy formation’s process (Andrews, 1987; Ansoff and McDonnell, 1990; Quinn, 1978; Mintzberg, 1994);
- (3) markets vs resources’ perspective on strategy content (Porter, 1985; Webster, 1994; Barney, 1991; Prahalad and Hamel, 1990);

(4) competition vs cooperation (Porter, 1985).

In case of every aforementioned paradox, it is highlighted by many authors that these oppositions should be combined in strategic management (e.g. Brandenburger and Nalebuff, 1996; Lado *et al.*, 1997; Langley, 1989; Mintzberg, 1985). The study shows that managers of the studied industry are able to do this, indeed, in practice.

Second, our study contributes to the discussion on the influence of decision-makers' individual characteristics on their decisions. Specifically, it contributes to the discussion on the use of demographics as proxies of managerial behaviors, bringing arguments against criticism in this regard (Boal and Hooijberg, 2000; Damanpour and Schneider, 2006). In fact, research grounded in upper echelon theory suggest that while demographics itself is not the key driver of strategic process and decisions, it proxy larger, complex and hard-to-get constructs of managerial cognitions and behaviors (Carpenter *et al.*, 2004; Goll and Rasheed, 2005). We argue that managing strategic paradoxes is among these constructs.

Literature on consequences of managers' characteristics on their behaviors is rich, but the specific context of managing paradoxes has not been explored. Quite the opposite, studies such as Bantel's (1993) investigated the role of TMT demographics' heterogeneity on clarity of their strategic decisions, e.g. consistent cost-cutting in all aspects of business if they choose cost leadership strategy (Porter, 1985). Moreover, research on demographics' impact on managerial behavior bring inconsistent and sometimes contradictory results proving that the picture is very complex and needs more in-depth analyses. Many studies indicate that together with age, the risk-aversion and resistance to change and innovation grow (Vroom and Pahl, 1971; Grable and Lytton, 1998; Hambrick and Mason, 1984; Pegels and Yang, 2000; Curseu and Louwers, 2010). Some studies brought non-significant result of age on organizational change and innovation (Damanpour and Schneider, 2006; Nystrom *et al.*, 2002). A reverse correlation is presented in a study of South African investors, showing that the older ones were less risk-averse than the younger (Dickason and Ferreira, 2018). On top of that, there is also evidence proving that older and younger managers share, in fact, many similarities and differ with very limited behaviors (Oshagbemi, 2004), some decision-making skills decline with age, others remain unchanged or improve (Bruine de Bruin *et al.*, 2007) and older adults show more variable risky choices than younger (Samanez-Larkin and Knutson, 2015).

Perceived resistance to change or risk-aversion of older decision-makers may result from their need to gather more information before taking decisions (Taylor, 1975; Goll and Rasheed, 2005). For the same reason older managers have higher ability in managing paradoxes: they process larger variety of information, are able to diagnose the value of information more accurately and are more flexible in altering their decisions in the face of adverse consequences of their choice (Taylor, 1975; Forbes, 2005a; Goll and Rasheed, 2005). They have had time to recognize and correct their biases through experienced failures, judgmental errors etc. tempering their tendency to overestimate the accuracy of own knowledge, as indicated by the study of Forbes (2005a). They usually belong to extended networks enabling them to have access to sources of valuable information and knowledge outside a company (Damanpour and Schneider, 2006; Fischer and Pollock, 2004; Richard and Shelor, 2002). This can explain results of the study by Forbes (2005b) showing that older managers make faster decisions than younger ones. Belonging to extended networks is associated with more reputational capital which may make them see themselves as having more to lose from a failure (Forbes, 2005b), which can additionally explain older managers' aversion to risk. If decisions made by older managers lead to higher probability of company survival, although under a cost of slower company growth as indicated by Belenzon *et al.* (2019), this may be explained by their higher ability of managing paradoxes.

Age measures adopted in our survey allowed us to analyze an impact of generational affiliation on respondents' ability to manage paradoxes. Consequently, we followed the cohort perspective (Pilcher, 1994; Ryder, 1965) which is the most common in management studies (Baker Rosa and Hastings, 2018; Lyons and Kuron, 2014). It assumes that the generation represents a demographically distinguished group of people experiencing the same event within the same time interval (Ryder, 1965). Typically, four-generation categorization is adopted (Lyons and Kuron, 2014): "Traditionalists," "Baby Boomers," "Generation X" and "Generation Y". An explosion of research on generational differences in the workplace observed recently (Lyons and Kuron, 2014) still leads to inconsistent results. A great deal of research focuses on differences in work values (e.g. Lyons *et al.*, 2010), work-related attitudes (e.g. Costanza *et al.*, 2012), priorities on work-life balance (e.g. Twenge *et al.*, 2010) and none of them refers to ability of managing paradoxes. Our study suggests that, indeed, generation groups may have nothing to do with it, but the issue needs further research.

The aforementioned impact of age on decision-making may be influenced by the years of management experience (Taylor, 1975), reflected in tenure in a company and at a current position. In our study both were positively correlated with declarations of connecting paradoxes in strategic decision-making, which supports the notion of positive correlation between age and the level of experience (Sandberg and Hofer, 1987; Sapienza and Grimm, 1997). It is in line with studies showing that managerial experience correlates with better knowledge of critical contingencies related to various processes and skills of managing them, including successful adoption of innovations (Papadakis and Bourantas, 1998; Damanpour and Schneider, 2006; Mumford, 2000). Studies show that managerial experience measured with tenure may lead to the quality of data processing (Fisher *et al.*, 2003) and serves as predictor of effective fund performance (Naidenova *et al.*, 2015).

Simultaneously, our study brings different from expected results regarding links between educational background and managing paradoxes. Economic/business education turned out to be not conducive to the disposition of connecting contradictions in strategic decisions. Literature review indicates that this aspect has been analyzed rarely, generally showing positive effect of business education on managers' performance (Papadakis and Bourantas, 1998; Naidenova *et al.*, 2015; Gottesman and Morey, 2006). Most of previous studies, e.g. Curseu and Louwers (2010), focused, however, on a level of managers' education and its impact on decision-making. Still, some of them brought non-significant effect of education on managerial processes, e.g. innovation implementation (Damanpour and Schneider, 2006).

There are some possible explanations of our results. Management schools seem to share a common vision of educating students in analytical skills and solving practical problems (Hallinger and Bridges, 2007). As Mintzberg (2002, p. 10) writes, graduates of management programs "[...] are often ill prepared for the predominant work of managers which involves solving messy, [...] ambiguous problems that often have no clear solution." Similarly, Bennis and O'Toole (2005) point out that business schools are too focused on "scientific" research, and they graduate students who are poorly equipped to face complex, unquantifiable issues. They are trained in management techniques based on a causal logic that affect their logical frame and heuristics of decision-making (Dew *et al.*, 2009). Excessive fragmentation and specialization of programs, i.e. the absence of more generalized and interdisciplinary approach, are indicated among main drawbacks of the business education (Gurău, 2015; Thomas and Mengel, 2008). It is dominated by the case study method based on a presentation of a single and most effective course of action (Rippin *et al.*, 2002). Moreover, very often there is no considerable time for discussing nuances due to mass character of business studies (Rippin *et al.*, 2002).

Domain-specific knowledge may, in fact, decrease accuracy of data processing affecting beliefs about data and truncating the decision process early (Klein *et al.*, 1997; Dukerich and

Nichols, 1991). A novice in a sense of different domain of education, may be more attentive to new information (Fisher *et al.*, 2003). According to the same study, people with a more generalized background use data more effectively.

### 5.1 Implications for practice

The study contributes mainly to the theory development, while deriving direct practical managerial implication, i.e. suggesting the need for entrusting decision-making to older persons educated in other fields than economics/business, may be rather misleading. However, our results reinforce the call for demographic heterogeneity of TMTs (Bantel, 1993; Sperber and Linder, 2018).

Our study suggests there are deficiencies existing in managerial education that may make candidates for managerial positions biased towards clear and unambiguous choices in decision-making. In line with the current stream of research emphasizing importance of managing paradoxes, it should be definitely changed. The scope of this paper does not allow for an extended discussion on this issue, but at least we can refer to so-called experiential pedagogy (Mitchell and Chesteen, 1995). The essence of this method is to introduce experts' scripts into teaching programs in economics and business.

### 5.2 Limitations of the study and implications for future research

Our study was of a pilot and preliminary nature. Therefore, its results only suggest possible effects of demographics of decision-makers on their disposition to connect contradictions in strategic decisions, that now may be deepen in next studies. Moreover, the study was conducted in one selected sector, which is both an advantage and disadvantage. It allows to analyze strategic choices made by decision-makers operating within rather homogenous environment and this way we controlled external factors affecting decision-making. On the other hand, it does not allow to generalize the findings to a larger extent. As the study by Belenzon *et al.* (2019) shows, the relationship between managers' age and company growth can be moderated by the industry type and it is stronger in service industries than in manufacturing industries, such as the one present in our study.

We have chosen the quantitative approach which has limitations in comparison with the qualitative one, especially when studying paradoxes which concern meanings people give to specific choices. However, the qualitative survey would not permit to analyze relations being the aim of our study.

It would be interesting to control for effects of various internal characteristics, which have been proposed to be antecedents of managing paradoxes (see section 2.2). We have decided not to do it though as there is no consensus on which are the most meaningful. Moreover, including multiple scales in the questionnaire would decrease the number and engagement of participants. Nevertheless, results of our study inspire for further investigations. They may be of qualitative nature, including semi-structured interviews, and/or quantitative one, leading to build hierarchical models.

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Strategic paradoxes	Items
Logic vs Creativity	In strategic management, analyses, calculations and rationality are the most important In strategic management, it is the most important to use intuition, imagination and emotions
Deliberateness vs Emergence	In our company, strategic plans are not necessary to start acting Before we act, we always have a strategic plan ready Our organization and actions stem from the adopted strategy Our strategy emerges from our actions
Revolution vs Evolution	In our company, we introduce changes in a radical way (i.e. rapidly and quickly) We introduce changes gradually in our company
Markets vs Resources	The main factor determining our activities is the specificity of the environment (we analyze external opportunities and threats and adapt to them internal resources) The main factor determining our activities is the specificity of our resources (we are focused on our strengths and weaknesses)
Responsiveness vs Synergy	Actions of all organizational units should be integrated Organizational units should be autonomous
Competition vs Cooperation	In our activities, we remain independent of other market players (competitors, suppliers, customers) In our activities, we closely cooperate with other market players (competitors, suppliers, customers) Our interactions with other market players go beyond just transactions; we build good relationships, often interpersonal We restrict our contacts and interactions with other market players to just transactions
Compliance vs Choice	Our success depends on adopting to the industry patterns Our success depends on our individual choices: we differentiate ourselves from the industry and create new patterns
Control vs Chaos	Managers play the most important role in shaping the organization's development The organization's development is shaped by group dynamics and bottom-up influences
Globalization vs Localization	Our company implements the globalization strategy: we unify products and integrate activities at the international level Our company implements the regionalization strategy: we differentiate products and operations locally

**Table A1.**  
Operationalization of strategic paradoxes

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