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The Ordinariness and Denaturation of Small Business: Conceptual Framework and Empirical Evidence from the European Union

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Abstract: [For more publications visit www.matejun.com]

Purpose: The paper aims to constitute and operationalize the conceptual (theoretical) framework of the ordinariness and denaturation of small businesses, as well as empirically verify the nature, extent, and consequences of this phenomenon for small business competitiveness and performance.

Design/Methodology/Approach: Based on the literature review, four research gaps have been identified, and four research hypotheses have been stated. In order to achieve the aim of the study, survey research was conducted on a random sample of 1741 SMEs from 22 European Union countries.

Findings: As part of the study framework, conceptualization, operationalization, and empirical verification of small business denaturation were done. It is found that ordinary and denatured SMEs differ significantly in the areas of management, structure, specialization, autonomy, and scope of market operations.

Practical Implications: Entrepreneurs should seek specific configurations of the denatured features to develop key determinants of market competitiveness and improve business performance.

Originality/Value: The results significantly extend previous studies on SME denaturation and provide new insights into small business professionalization, competitiveness and performance management.

Keywords: Small business, entrepreneurship, business performance.

JEL Codes: L20, L25, L26.

Paper type: Research article.

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1. Introduction

The problem of understanding the nature of micro, small, and medium-sized enterprises (SMEs) is strongly related to criteria distinguishing them from other (usually large) companies. The variety of SME definitions worldwide (Sidek, Rosli, Hasbolah, and Khadri, 2020) leads to difficulties in interpretations and constitutes fundamental methodological challenges for small business management researchers.

Other problems listed by Berisha and Pula (2015) include imprecision in the measurement of quantitative criteria, insufficient weight attached to the specific qualitative features of small businesses, and absence of empirical verification of the applied criteria in business practice.

Additional difficulties result from the fact that, as noted by Torrès (2003b), the class of SMEs contains certain enterprises that, even though they fulfill the quantitative criteria, are of a significantly different qualitative character. This leads to distortion or even rejection of the paradigm of the qualitative ordinariness of small business.

This character difference is based on the fact that these firms exhibit qualitative features that are not typical of SMEs but are found in large businesses. This does not refer, however, to a comprehensive adoption of the solutions applied by large firms but to the occurrence of particular indications of distortion of the typical (ordinary) qualitative character of SMEs. This deviation is described as the denaturation of small businesses.

In the previous literature, the problem of small business denaturation was started recently and considered only in a fragmentary scope despite its important theoretical and practical significance. A bibliographic analysis conducted in December 2023 in two databases, Web of Science Core Collection (WoS CC) and Scopus, confirmed this. These two databases were chosen for analysis because they include leading scientific journals, constituting their leading position as scientific databases (Stahlschmidt and Stephen, 2022).

The inquiry included a conjunction of the term “denaturation” with the alternative of at least one term: “small business” or “SMEs.” It was searched for in title, abstract, and keywords in business/management or social sciences journals. In WoS CC, only two publications (Karoui, Khlif, and Ingley, 2014; Karoui, Khlif, and Ingley, 2017) were identified from the period 2014-2017, while SCOPUS returned one publication only from 2017 (Karoui, Khlif, and Ingley, 2017).

In order to capture the broader scientific context, the analysis was supplemented with a Google Scholar database from which 14 results were obtained for the inquiry “small business denaturation” from 2003-2022, 9 for “denaturation of small business” (2006 – 2022) and 6 for “denaturation of SMEs” (2001-2022). No results were found for the inquiry “SMEs denaturation.”

The results of the bibliographic analysis indicate that there needs to be more scientific debate in the area of small business denaturation, while this research problem is highly topical. In the identified publications, more discussion was needed on the definition and substantive scope of the concept of small business denaturation. Its nature, the extent of its occurrence in business practice, and the assessment of the impact of denaturation on the competitiveness and performance of SMEs still need to be sufficiently studied.

This, therefore, indicates that there are significant and clearly defined research gaps (RGs) in the field:

- RG1. Insufficient framework conceptualization and operationalization of small business denaturation in management sciences.
- RG2. Insufficient empirical verification of the extent of small business denaturation occurrence in business practice.
- RG3. Insufficient assessment of the impact of denaturation on small business competitiveness.
- RG4. Insufficient assessment of the impact of denaturation on small business performance.

Considering it, this paper aims to constitute and operationalize the conceptual (theoretical) framework of the ordinariness and denaturation of small businesses as well as empirically verify the nature, extent, and consequences of these phenomena for small businesses' competitiveness and performance. The paper contributes to the microeconomics and management theory of small business specificity and diversity.

By enabling a better understanding of the choices in the configuration of denatured managerial solutions, results provide essential insights into small business professionalization. The identification of the characteristic features of small business denaturation is also a significant research achievement from this paper.

The paper is organized as follows. It begins with a literature review for conceptual framework building and research hypotheses development. The following section presents the research methodology as well as the characteristics of surveyed enterprises and study respondents. The results of the research are presented in detail. Next section is discussion with previous literature and hypotheses empirical verification. The paper is summed up with a section containing theoretical and methodological managerial conclusions and implications. In this part, research limitations and future directions of research are also provided.

2. Literature Review

Challenges in defining, classifying, and understanding the nature of SMEs (as opposed to large enterprises, LEs) are fundamental problems in small business research. The beginnings of these deliberations are linked to studies from

representatives of the Aston school (Pugh, Hickson, and Hinings, 1969; Mintzberg, 1979; Penrose and Pitelis, 2009) and the report from Bolton (1971). This led to the distinguishing of the category of small business as a coherent class based on specific, identifiable, and observable quantitative (measurable) and/or qualitative (non-measurable) criteria (Dandridge, 1979; Welsh and White, 1981).

The most commonly applied quantitative criteria include the number of employees and specified resources (usually financial) quantities expressing the inputs or outputs of business operations. Considering the practical usefulness, small business definitions are usually based on a quantitative approach (Dilger, 2013).

An example may be a formal, uniform definition of micro, small, and medium-sized enterprises formulated by the European Commission (2015) for the European Union. It defines the boundaries of the SME sector at the level of 249 employees (full-time employment equivalents) and a yearly turnover of EUR 50 million or an annual balance sheet total of EUR 43 million. In addition, capital and/or ownership links between SMEs and other enterprises are considered. These links affect the final level of quantitative criteria adopted for the company size analysis if significant.

However, the quantitative approach is insufficient to interpret the specific nature of SMEs independently. For this reason, attention is drawn to the importance of qualitative criteria. An example is the “ordinary small business” model by Mazzarol, Reboud, and Clark (2011). Apart from quantitative criteria, this model also concentrates on qualitative features such as the owner-manager characteristics, the firm’s strategy, organizational configuration, and preferences among financing sources.

According to this proposal, key characteristics of a small business include the centralization of management in the hands of the owner, an intuitive style of management, relatively informal organizational structures, and the dominance of internal sources of financing (Pociovalisteanu *et al.*, 2010; Cristea *et al.*, 2022).

Other qualitative features specific to small businesses include independence and a high level of business autonomy, informal and simplified systems of communication, low market share and geographical range of market operations (concentrated primarily in market niches), a high level of business specialization, and orientation towards product and/or service specialization (Storey and Greene, 2010; Kaczmarek, Byczkowska, and Czyrka, 2016; Otto, Baluku, Hünefeld, and Kottwitz, 2020; Thalassinos *et al.*, 2023; Velinov *et al.*, 2023).

However, every list of specific characteristic features does not define SMEs unambiguously. This is because of the highly heterogeneous structure of the small business sector, which includes many types of entities that deviate significantly from the profile of ordinary small business (Newlin, 2020; Aristei and Angori, 2022). One of the examples of this deviation is the small business denaturation.

This is manifested in the maintenance of small sizes of operations (in terms of defined quantitative criteria) where, nonetheless, many or most of the qualitative attributes are typical not for small businesses but rather for large firms (Torrès, and Julien, 2005).

Ingle, Khlif, and Karoui (2017) based on Torrès (2003a; 2003b) initial idea of denaturation, highlight the dynamic nature of this phenomenon. “De-natured” SMEs moved beyond characteristics of the 'ordinary small business concept' and have come to resemble the larger firm, representing characteristics such as formalization of systems and processes, diversification of the business operations, and internationalization of markets.

Moreover, in their perspective, the phenomenon of denaturation is opposed to the concept of proximity. Proximity refers to the nature of firms represented by ‘the ordinary small businesses concept’ with centralized management, low labor specialization, intuitive and short-term strategy, simple and informal information systems, and operating rather on the local market.

Furthermore, Karoui, Khlif, and Ingle (2017) perceive ordinariness – denaturation nexus as continuum explaining specific levels of differentiation between SMEs and capturing the heterogeneous nature of small businesses. Thus, on this basis, it is possible to treat denaturation as a synthetic variable expressing the qualitative structure of a small business and conduct empirical observations and analyses based on it.

A literature review found an insufficient framework for the conceptualization and operationalization of small business denaturation. An inspiration to reduce this research gap may be the proposal to distinguish the small (ordinary) and anti-small (denatured) businesses formulated by Torrès and Julien (2005). However, it requires the original development and deepening of the areas of small business qualitative specificity proposed in the previous literature (Mazzarol, Reboud, and Clark, 2011; Schaper, Volery, Weber, and Gibson, 2014; Kaczmarek, Byczkowska, and Czyrka, 2016; Boukaira and Daamouch, 2021), as shown in Table 1.

Table 1. *Conceptualization and operationalization of small business ordinariness and denaturation*

Characteristic features	Ordinary SMEs	Denatured SMEs
Area of management		
Level of management centralization	centralization intuitive and short-term	decentralization formalized and long-term
Strategic approach to the company’s development	simple and informal	complex and formal
Information system in the company		
Area of structure		
Relations between ownership	unity of ownership and	separation of ownership and

and management Organizational structure	management simplified and weakly formalized	management complex and strongly formalized
Area of specialization Scope of duties in the company Returns to scale	broad scope, varied duties small possibilities of application	narrow scope, specialized duties large possibilities of application
Area of autonomy Relations with other entities Sources of financing	high level of independence from other entities own, internal	limited level of independence from other entities third party, external
Area of scope of operations Market coverage Competitive arena	local/regional market niche	national/international broad competitive arena

Source: Own study.

This conceptualization and operationalization of small business ordinariness and denaturation leads directly to hypothesis H1:

H1: Ordinary and denatured SMEs are significantly differentiated qualitatively in the areas of management, structure, specialization, autonomy, and scope of market operations.

The denaturation phenomenon is linked with such processes in SMEs as the growing number of strategic alliances (Cacciolatti, Rosli, Ruiz-Alba, and Chang, 2020), wide use of quality management systems and their certification (Sahoo, 2019), the formation of increasingly complex networking relations (Ghuri, Mazzarol, and Soutar, 2023), increased use of high-risk forms of capital, (Nokkala, 2022) and the increasingly rapid internationalization of small business related to the globalization of markets and widespread use of new communication technologies (Torrès, 2003a).

What is meant here is not the direct implementation of the concepts and methods of management applied in large firms or the treatment of SMEs as miniatures of such firms but the occurrence of particular qualitative characteristics that oppose those typical of small businesses. This leads to the formulation of hypothesis H2:

H2: In the SME sector, defined based on specific quantitative criteria, there exists a significant fraction of denatured firms having specific qualitative features most of which are characteristic of “anti-small” (large) business.

Torrès and Julien (2005) link the small business denaturation concept to the occurrence of miniaturized large firms (‘baby big businesses’) within the class of SMEs. In their approach, such a denaturation may be unfavorable or pathological for small businesses. This view is strongly questioned by Curran (2006), who points out

that SMEs may effectively combine ordinary and denatured managerial solutions and use denatured strengths to improve their (1) competitiveness and (2) business performance.

Company competitiveness, in general, is defined as the ability of an entity to effectively compete through evolving, developing, and excelling in creating and exchanging value in order to meet market expectations, generate economic benefits, and be relatively superior compared to its competitors (Bandarian, 2020; Milusheva, 2020; Pono and Munizu, 2021).

In small businesses, owner-managers entrepreneurship is the primary and leading component of building competitiveness. Entrepreneurial intentions, competencies, and behaviors directly and significantly influence small SMEs' market success (Runst and Thomä, 2022).

In addition, small businesses can effectively develop certain entrepreneurial/managerial concepts that foster modern competitiveness: development of knowledge resources (Massaro, Moro, Aschauer, and Fink, 2019), organizational flexibility (Fachrunnisa, Adhiatma, Lukman, and Majid, 2020) and readiness for change (Terekhova and Trofimova, 2021).

Recent studies show that these features positively and significantly affect company competitiveness. According to Alikhani and Shahriari (2022), entrepreneurial attitudes, including proactiveness and risk-taking, affect the competitiveness of startups. Abuanzeh, Alnawayseh, Qtaishat, and Alshurideh (2022) noted that knowledge management has a positive, significant effect on achieving competitiveness.

This is especially important for SMEs because intangible resources are much more important than tangible ones. This is because the definition of small businesses implies that SMEs operate with limited human, financial, and other tangible resources. On the other hand, these entities can develop intangible resources without any restrictions.

Anning-Dorson (2021) considered the impact of flexibility on competitiveness in the broader context of organizational culture and leadership. According to his results, market flexibility amplifies the impact of organizational culture and leadership on competitiveness and competitive advantage. The author suggests that companies should use their organizational culture and leadership to create flexible organizations that allow them to adapt to the environmental dynamics and support competitiveness.

Finally, Borisov and Popova (2021) confirm that the ability to change is an important component in the overall approach to managing the company's competitiveness. They underline that initiating and managing change is necessary

for a company to adapt to changes in the business environment effectively, meet market expectations, and achieve economic benefits. This leads to the formulation of hypothesis H3:

H3: Denatured SMEs demonstrate significantly greater development of key determinants of SME competitiveness – owner's/manager's entrepreneurship, knowledge development, organizational flexibility, and readiness for changes – than ordinary SMEs.

Business performance is a well-grounded construct in management sciences. It expresses a company's ability to achieve its goals and build a sustainable competitive advantage regarding profitability, sales growth, and execution of core strategic advantages (Hult, Hurley, and Knight, 2004).

Due to the complexity of this construct, it is generally analyzed along financial dimension, including, for example, a company's revenue, liquidity, or return on investment, as well as qualitative dimension, including, for example, product/service quality, innovation, customer loyalty, or a company's responsible community (Aragón-Sánchez and Sánchez-Marín, 2005; Abbas, Raza, Nurunnabi, Minai, and Bano, 2019).

In this context, comparing small business denaturation to the 'professional small business' concept becomes important (Ingley, Khlif, and Karoui, 2017). Small business professionalization is related to including an independent board of directors or hiring professional managers who bring their tacit knowledge and social capital relationships to contribute to professional management.

In this concept, decentralization and formalization of organizational systems and practices are important, as well as a more complex approach to the strategy and information systems of the company (Mariano, 2023).

Recent research indicates that business professionalization positively and significantly impacts small business performance, especially in family SMEs (Dekker, Lybaert, Steijvers, and Depaire, 2015; Pauli, 2020; Polat, 2021; García-Lopera, Santos-Jaén, Palacios-Manzano, and Ruiz-Palomo, 2022).

This is also confirmed by the results of Totskaya (2015), according to which denatured SMEs have more horizontal ties to their business environment. Thus, they are better positioned to access new markets or opportunities than ordinary SMEs. In the long term, this may positively affect the performance of denatured companies. This leads directly to hypothesis H4:

H4: Denatured SMEs achieve better business performance than ordinary SMEs, translated into two separate hypotheses: H4a: Denatured SMEs achieve better

quantitative business performance than ordinary SMEs, and H4b: Denatured SMEs achieve better qualitative business performance than ordinary SMEs.

3. Research Methodology

To meet the paper's objective and verify research hypotheses, I conducted the survey research. Due to the increasing role and scope of the Internet and email communication in small businesses (Thrassou, Uzunboylu, Vrontis, and Christofi, 2020; Brodny and Tutak, 2022), I decided to use the Computerized Self-Administered Questionnaire (Callegaro, Manfreda, and Vehovar, 2015) as a research technique. The research tool was an electronic survey questionnaire I shared with respondents via the www.questionpro.com system. The respondents received emails inviting them to take part in the study.

The study was carried out in a geographical area comprising purposely selected 22 European Union countries. The selection was based on the highest number of operating business entities. The analysis covered the areas in which, according to Eurostat data (2023) and the SME Performance Review Annual Report 2022/2023 (2023), over 28m enterprises operate, of which more than 98% are SMEs.

According to the data of The World Bank indicators (2023), the surface area of the study is over 4m km² (more than 95% of the EU area) and is inhabited by approx. 500m people (98% of the EU population).

As for the population of enterprises frame, a database of business emails that had been delivered by an external supplier – a company professionally involved in collecting contact details of entities in the EU. It was ensured that the database contained enough emails to conduct research in the selected area to be considered a data source, offering an equal probability of being included in the sample to all companies active in the studied area.

My research assumptions specified the minimum sample size (Keller, 2012) at the representative level for the SME population in the EU, numbering 385 entities. The following assumptions were adopted: margin of error: 5%, confidence level: 95%, UE SMEs according to Eurostat data (2023): 29,159,581 companies.

The data collection technology used by the supplier made it impossible to unambiguously determine the email addresses of entities classified as micro, small, and medium-sized enterprises based on the single, uniform definition of a small business used in the EU.

Because of this, a decision was made to send invitations to various entities (including public entities and large companies), considering that the SME sector companies comprise 99.8% of the companies in the relevant geographic area.

The invitations were sent to 500,000 email addresses. The number of business entities that responded was 1967. Based on filter questions, 1741 answers were identified in the sample as answers given by the representatives of the SME sector that met the criterion of the uniform formal definition of a small business used in the EU.

Study participants included representatives of 1183 (68%) micro-enterprises, 399 (23%) small enterprises, and 159 (9%) medium-sized enterprises. The entities in question are predominantly individual companies (45%) or limited liability companies (35%). Mostly, they are service businesses (60%), less frequently production (21%), and trade companies (19%).

In most cases, they operate on the domestic market (39%), less frequently on international and global markets (35%), and local and regional markets (26%). The predominant category is entities active for over 20 years (36%) and companies aged 5 to 10 years (21%). The results show that one-half of the sample are companies that had been running business for 15 years or less, while the other half – are entities that had been active for more than 15 years.

The questionnaires were predominantly filled out by company owners (75%), less often by senior management (18%), or employees authorized by their management to participate in the survey (7%). They were mostly men (70%), persons aged 31–40 (30%), or aged 50 or more (36%) with higher education (81%) in technical subjects (40%) or business/managerial subjects (26%).

4. Research Results

In the first part of the analyses, I assessed the identification scope of qualitative features of ordinary (typical) small and anti-small (denatured) businesses in particular areas of SME specificity. The identification was made based on respondents' declarations made in the survey. The results show that, on average, the sample is dominated by qualitative features typical for ordinary small businesses (on average: 8.1) in comparison to the features typical of denatured SMEs (on average: 2.9).

The scope of characteristic features for an ordinary small business shows a statistically significant decrease of moderate intensity as the size of surveyed businesses increases, $r_s(N = 1741) = -0.30$, $p < 0.01$, which is presented in detail in Table 2.

Based on theoretical considerations, I selected 11 qualitative features typical of small businesses to determine the denaturation level for the companies under analysis clearly. On this basis, I identified 118 (6.8%) denatured SME sector companies in the case of which the qualitative features typical of anti-small businesses are higher than those of ordinary small businesses.

Table 2. Level of qualitative features characterizing ordinary and denatured SMEs in the sample

Qualitative characteristic features of ordinary and denatured SMEs		Micro		Small		Medium	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Area of management							
Ord.	Centralization of management	1068	90%	330	83%	127	80%
	Intuitive and short-term approach to the company's development	729	62%	216	54%	63	40%
	Simple and informal information system	964	81%	267	67%	88	55%
Denat.	Decentralization of management	115	10%	69	17%	32	20%
	A formalized and long-term approach to the company's development	454	38%	183	46%	96	60%
	Complex and formal information system	219	19%	132	33%	71	45%
Area of structure							
Ord.	Unity of ownership and management	1158	98%	372	93%	136	86%
	Simplified and low-formalized organizational structure	1160	98%	363	91%	123	77%
Denat.	Separation of ownership and management	25	2%	27	7%	23	14%
	Complex and strongly formalized organizational structure	23	2%	36	9%	36	23%
Area of specialization							
Ord.	The broad and varied scope of duties	830	70%	274	69%	102	64%
	Small possibilities of applying returns to scale	611	52%	192	48%	55	35%
Denat.	Narrow and specialized scope of duties	353	30%	125	31%	57	36%
	Large possibilities of applying returns to scale	572	48%	207	52%	104	65%
Area of autonomy							
Ord.	High level of independence from other companies	987	83%	320	80%	126	79%
	Own, internal source of financing	1086	92%	341	85%	128	81%
Denat.	Limited level of independence from other companies	196	17%	79	20%	33	21%
	Third-party, external source	97	8%	58	15%	31	19%

		of financing						
Area of scope of market activity								
Ord.	Local/regional scope of operations	930	79%	254	64%	70	44%	
	Operating in a market niche	494	42%	145	36%	47	30%	
Denat.	National/international scope of operations	253	21%	145	36%	89	56%	
	Operating in a wide competitive arena	689	58%	254	64%	112	70%	
The average number of characteristic features for ordinary SMEs		8.5		7.7		6.7		
The average number of characteristic features for denatured SMEs		2.5		3.3		4.3		

Source: *Own work based on survey research.*

At the same time, no company with a full anti-small business profile was identified. Because of this, I introduced the "Denaturation Level (DL)" variable that represented the scope of anti-small business features indicated by the respondents.

The highest denaturation level of 82% was shown by seven respondents, which suggests that the companies they represent demonstrate nine features characteristic of anti-small businesses against two features typical of ordinary small businesses. The range of occurrence of denatured companies grows only slightly with the increasing size of the companies under analysis $r_s (N = 1741) = -0.22, p < 0.01$, amounting to over 20% for medium-sized companies, as presented in Table 3.

Table 3. *Level of occurrence of ordinary and denatured SMEs in the sample*

Type of small business	Overall the sample		Micro		Small		Medium	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Ordinary SMEs	1623	93%	1144	97%	353	88%	126	79%
Denatured SMEs	118	7%	39	3%	46	12%	33	21%

Source: *Own work based on survey research.*

In the next part of my analyses, I focused on assessing key competitiveness determinants of small businesses. Compliant with the conclusions in the theoretical part, I included here: (1) company owner's/manager's entrepreneurship, (2) ability to expand knowledge as an intangible asset, (3) company's flexibility level, and (4) ability to implement organizational changes.

I measured those values based on suitable synthetic measures, as part of which specific items were expressed using the interval Visual Analog Scale (VAS) (Funke, Reips, 2012), in the range from 0 (does not apply to the company) to 100 (fully applies to the company).

According to the company owner's/manager's entrepreneurship, I included the following descriptive indicators (based on Bernat, Gasior, Korpysa, Lakomy-Zinowik, Nagaj, and Szkudlarek, 2014; Alikhani and Shahriari, 2022), proactive attitude to market opportunities, focus on cooperation and interaction with the business environment, taking calculated business risks, good self-esteem, and confidence in one's effectiveness.

The assessment of knowledge development level was made based on such items (Lee and Lee, 2005; Abuanzeh, Alnawayseh, Qtaishat, and Alshurideh, 2022) as business environment monitoring with the goal being the acquisition of useful information, learning through experience, and creating conditions conducive to preserving and sharing knowledge across the company.

When analyzing the company's flexibility, I took into account the items (based on Verdú-Jover, Lloréns-Montes, and García-Morales, 2006; Anning-Dorson, 2021) that describe the ability to modify the organizational and employment structure depending on the company's needs, having resources surplus that facilitates taking necessary activities, being focused on getting ahead of market trends as well as identifying and exploiting market opportunities.

In the assessment of readiness to implement changes, I used such items (based on Bowles, 2006; Borisov and Popova, 2021) as the scope of planning and monitoring of change implementation and the effects obtained this way, ensuring leadership in the process of change implementation and involvement of company's staff in the change implementation process.

The set of items describing the performance of the analyzed companies was adopted based on the proposals from Aragón-Sánchez and Sánchez-Marín (2005) as well as Abbas, Raza, Nurunnabi, Minai, and Bano (2019) they assume taking into account in the complex structure quantitative measures (level of revenues, return on investment and market share) as well as qualitative measures (among others quality and ability to expand the offer of products and services, teamwork, or corporate responsibility).

Moreover, I considered the reference level of adopted items to the performance of key competitors (based on Koh, Demirbag, Bayraktar, Tatoglu, and Zaim, 2007). Consequently, in measuring, I used an interval Visual Analog Scale (VAS) from 0 (much worse than competitors) to 100 (much better than competitors). All synthetic variables reached acceptable Cronbach's alpha coefficient values, which should be between 0.7 and 0.9 (Tavakol and Dennick, 2011). The variables vary positively to a small extent depending on the size of the analyzed companies, which is presented in Table 4 in detail.

Descriptive statistics of variables, including Denaturation Level (DL) and statistical correlations between them, can be found in Table 5.

Table 4. Synthetic variables used in quantitative research

Variable	Items	Alfa Cr.	Overall	Micro	Small	Medium
			M	M	M	M
Owner's/manager's entrepreneurship (OME)	4	0.868	71	70	74	79
Knowledge development (KD)	4	0.818	55	54	56	63
Flexibility of the company (FC)	4	0.829	52	50	56	60
Readiness for changes (RCh)	3	0.878	53	51	55	62
Performance of the company (PC)	8	0.798	61	60	63	66
Financial performance (FPC)	3	0.706	49	47	52	58
Qualitative performance (QPC)	5	0.782	68	68	70	71

Source: Own work based on survey research.

Table 5. Descriptive statistics and correlations between the variables

Var	Mdn	SD	OME	KD	FC	RC	PC	QNP	QLP
DL	3	1.65	0.23**	0.23**	0.23**	0.24**	0.24**	0.17**	0.23**
OME	76	23.81		0.57**	0.58**	0.56**	0.40**	0.24**	0.40**
KD	57	26.17			0.59**	0.65**	0.37**	0.21**	0.38**
FC	53	26.17				0.63**	0.42**	0.29**	0.39**
RCh	56	29.82					0.40**	0.24**	0.40**
PC	62	15.56						0.73**	0.90**
QNP	51	18.91							0.39**
QLP	69	17.78							

Note: Significance test of Pearson's linear correlation coefficient. * significant at 0.05; ** significant at 0.01.

Source: Own work based on survey research.

The last part of the analysis concentrated on identifying and assessing differences between ordinary and denatured companies in the sample concerning particular areas of qualitative specificity of small businesses, key determinants of competitiveness, and performance of the examined enterprises. To perform this analysis, I applied the Mann–Whitney U test. The detailed results are presented in Table 6.

Table 6. Identified differences between ordinary and denatured SMEs

Variable	U	Z	Mean rank	
			Ordinary SMEs	Denatured SMEs
Area of management	17785.00	-15.910**	822.96	1531.78
Area of structure	51131.00	-17.252**	843.50	1249.19
Area of specialization	48106.00	-9.948**	841.64	1274.82
Area of autonomy	51664.00	-10.992**	843.83	1244.67
Area of scope of market activity	38768.00	-12.277**	835.89	1353.96
Owner's/manager's entrepreneurship	70111.50	-4.866**	855.20	1088.33

Knowledge development	70710.50	-4.751**	855.57	1083.26
Flexibility of the company	75700.50	-3.804**	858.64	1040.97
Readiness for changes	66570.50	-5.537**	853.02	1118.34
Performance of the company	67691.50	-5.324**	853.71	1108.84
Quantitative performance	74237.00	-4.082**	857.74	1053.37
Qualitative performance	68433.50	-5.183**	854.16	1102.56

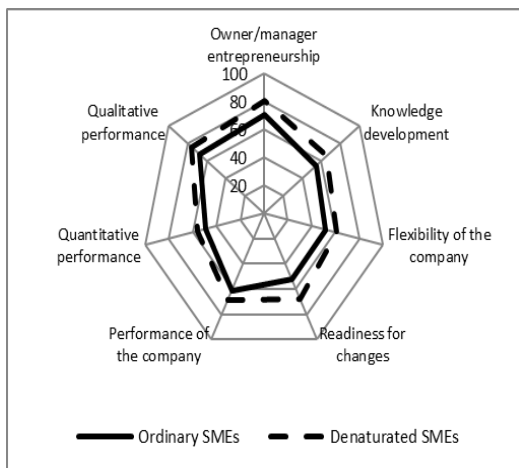
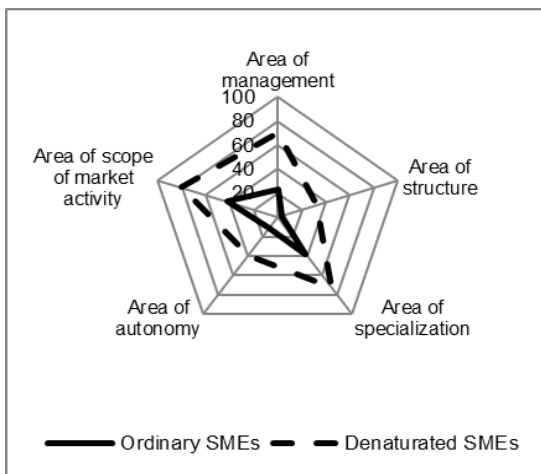
Note: Mann–Whitney U test. * significant at 0.05; ** significant at 0.01.

Source: Own work based on survey results.

Based on the obtained results, I prepared a visualization of the differences between the two SME sub-groups concerning particular areas of qualitative specificity of small businesses (Figure 1), key determinants of competitiveness, and performance of the examined companies (Figure 2).

Figure 1. Differences in ordinary and denatured SMEs from the perspective of areas of small business specificity

Figure 2. Differences in ordinary and denatured SMEs from the perspective of competitiveness determinants and performance



Source: Own work based on survey results.

To perform a thorough assessment of the impact the denaturation level exerts in particular areas of small business qualitative specificity on the formation of competitiveness determinants and performance of SMEs, I performed a regression analysis. The results are presented in Table 7.

All the analyzed models were statistically significant. However, the models' matching with the coefficient of determination R^2 is relatively low. The performed analyses allowed one to draw certain cognitive conclusions about the formation of competitiveness determinants and performance of SMEs depending on the denaturation scope in particular areas of qualitative specificity of small businesses.

Table 7. *The impact of the denaturation level on the competitiveness determinants and small business performance*

Dependent variable:		OME	KD	FC	RC	PC
Independent variable:	Area of management	0.2**	0.2**	0.24**	0.22**	0.28**
	Area of structure		0.05*			
	Area of specialization	0.05*		0.10**	0.05*	0.07**
	Area of autonomy			0.06*		0.08**
	Area of scope of market activity	0.06*	0.05*		0.05*	0.05*
Model statistic:	Observations	1741	1741	1741	1741	1741
	R ²	0.05	0.07	0.08	0.07	0.10
	F-stat	19.35**	23.34**	30.40**	27.00**	36.36**

Note: Multiple linear regression analysis. Standardized coefficients. * significant at 0.05; ** significant at 0.01.

Source: Own work based on survey results.

5. Discussion

The results indicate that, apart from the fulfillment of quantitative criteria, most of the surveyed SMEs exhibit the qualitative characteristics typical of small businesses, particularly regarding organizational structure and degree of autonomy. Even medium-sized firms mostly exhibit features typical of small businesses in these areas.

In the other areas – management, specialization, and scope of market operations – certain anti-small business features (such as a formalized and long-term approach to company development, possibilities of using advantages of scale, and national or international operational level) are beginning to become common in medium-sized firms (and sometimes also in small firms).

This supports previous studies on specificity and relative homogeneity of small and medium-sized enterprises as opposed to LEs (Bannier and Zahn, 2012; Ortiz-Martínez and Marín-Hernández, 2022). At the same time, it provides a material and methodological basis to carry out comparative studies of these two categories of entities (Spithoven, Vanhaverbeke, and Roijackers, 2013). On the other hand, internal qualitative differences between micro, small, and medium-sized enterprises motivate the carrying out of studies relating to the heterogeneity of small businesses (Pett and Wolff, 2012; Newlin, 2020).

The only qualitative indicator characteristic of anti-small business identified in most of the surveyed firms was the conduct of market operations in a wide competitive arena. It is likely assumed that this feature is not a significant distinguishing factor for denatured SMEs. On the one hand this represents a weakness of the surveyed firms (particularly micro and small enterprises), which need to recognize and exploit opportunities resulting from operating in market niches (Raju, Lonial, and Crum, 2011; Odlin and Benson-Rea, 2021)

On the other hand, the detailed results concerning the level of performance of firms operating in market niches and a wide competitive arena do not show statistically significant differences, either about total performance ($U = 361182.50$, $Z = -0.07$, $p > 0.05$), quantitative performance ($U = 354570.50$, $Z = -0.71$, $p > 0.05$) or qualitative performance ($U = 357627.00$, $Z = -0.41$, $p > 0.05$).

The presented research thus extends significantly previous studies (Torres and Julien, 2005; Karoui, Khelif, and Ingley, 2017; Totskaya, 2015; Ingley, Khelif, and Karoui, 2017) proposing comprehensive conceptualization and operationalization of small business denaturation in management sciences. This paper also strongly extends previous works by supporting theoretical assumptions with empirical evidence of the denaturation phenomenon in the SME sector.

The nature and extent of the denaturation of small businesses depend on qualitative characteristics of small businesses in five basic areas, management, structure, specialization, autonomy, and scope of operations. The results here show unambiguously that the qualitative characteristics of the two subgroups of surveyed entities – ordinary and denatured SMEs – differ statistically significantly in all five identified areas, which provides positive verification of hypothesis H1.

This insight simultaneously contributes to reducing the research gap RG1 related to insufficient framework conceptualization and operationalization of small business denaturation in management sciences.

Analysis of the extent of the specificity of small businesses in the studied sample shows it to be differentiated, and some of the firms exhibit primarily qualitative features typical of anti-small businesses. This fully confirms hypothesis H2, which states that in the SME sector, defined based on specific quantitative criteria, a significant fraction of denatured firms have specific qualitative features, most of which are characteristic of large ("anti-small") businesses.

Based on the survey, the average percentage of such firms in the SME sector is estimated at approximately 7%, including 3% of micro firms, 12% of small firms, and 21% of medium-sized firms. This fills the identified research gap RG2 related to insufficient empirical verification of the extent of small business denaturation occurrence in business practice. The nature of the identified denaturation phenomenon of small business shows its characteristics and features:

- measurable – it can be identified using research methods appropriate to the social sciences (Morin, Olsson, and Atikcan, 2021);
- relative – it refers to specific managerial solutions that are generally used in large enterprises rather than small businesses;
- dichotomous – based on specified criteria, it is possible to state whether a firm belongs to the category of ordinary or denatured small business;

- gradable – it can be expressed using a defined scale, such as an ordinal scale, reflecting the degree of denaturation of a firm;
- incomplete – none of the surveyed firms exhibited a complete degree of denaturation, meaning that even in denatured firms, certain qualitative characteristics of small businesses remain.

This study also brings new conclusions related to determinants of the competitiveness and performance of ordinary and denatured SMEs, which is one of the fundamental research challenges in the field of enterprise and small business management (Volery and Mazzarol 2015; Champenois, Lefebvre, and Ronteau, 2020).

The results clearly show that denatured SMEs are guided by more entrepreneurial owners/managers and exhibit a significantly greater degree of development of knowledge, organizational flexibility, and readiness for changes than ordinary SMEs, thus providing positive verification of hypothesis H3. At the same time, it significantly limits the research gap RG3 related to insufficient assessment of the impact of the denaturation phenomenon on small business competitiveness.

The results also show statistically significant dependencies between the level of denaturation considered all in areas of qualitative characterization of small business and the determinants of SMEs' competitiveness and performance.

More detailed analyses nonetheless indicate that particular determinants of small business competitiveness and performance are shaped by specific denaturation profiles, expressed by engagement in developing anti-small business features in specific areas of characterization. The most universal area is management, which significantly impacts the development of all determinants of the competitiveness and performance of SMEs.

Stronger owners'/managers' entrepreneurship is conditional on an orientation towards a higher degree of specialization and an increase in the scope of market operations. Increased specialization is linked to the development of intrapreneurship, which is one of the factors in strengthening the entrepreneurial orientation (Bouchard and Basso, 2011; Kraus, Breier, Jones, and Hughes, 2019).

The development of knowledge as an intangible resource, on the other hand, is favored by more professional, integrated, and comprehensive structural solutions and increased scope of market operations. This, on the one hand, is linked to the creation of a suitable climate for social interactions in the firm and its environment (Chen and Huang, 2007; Kim and Park, 2020) while on the other hand, it enables the development of cross-organizational knowledge-sharing management structures (Walczak, 2005) making up for the internal resource shortages experienced by small businesses.

The flexibility of SMEs is significantly and positively supported by the limitation of the firm's autonomy and the development of relations with external entities. Large importance attaches to inter-organizational relations and collaboration networks (Majid, Yasir, Yasir, and Yousaf, 2021).

Also of importance is access to outside sources of financing, making it possible to ensure flexibility in resource allocation and reduce the impact of cash flow problems (Markus, Rideg, 2021) while increasing firms' resistance to external shocks (Wiatt, Lee, Marshall, Zuiker, 2021), an example of which may be COVID-19 pandemic (Islam, Mansoor, Rahman, and Wahab, 2020).

Valuable insights from this research are also related to the significant role of specialization in the development of small business flexibility. A significant role in SMEs is played by flexible specialization (Fitzgerald, Dyerson, and Mishimagi, 2023), which is a fundamental way of achieving economies of scale (De Roest, Ferrari, and Knickel, 2018).

However, the effectiveness of the use of flexible specialization in firms in the SME sector results not from their limited size but from network and cluster connections, inter-organizational synergy, interfirm division of labor, and subcontracting (Van Dijk, 1995; Miglio and Breña, 2018).

Because flexibility is closely connected to readiness for organizational changes, even at the strategic level (Lloréns, Molina, and Verdú, 2005), in this case, too, there is good reason for the significant role played by the specialization of small business (though identified as a lower level of significance).

According to Farjoun (2010), specialization gives change processes the needed certainty and legitimacy, supports creativity through experience by removing unwanted variations and limiting opportunism, and allows the transfer of scarce attention and resources from routine to non-routine tasks.

Moreover, readiness for changes is closely linked to the development of market orientation (Tjahjadi, Soewarno, Nadyaningrum, and Aminy, 2022), scope of innovation (O'Dwyer, Gilmore, and Carson, 2009), often become a stimulator of radical changes of a creative nature (Perényi and Trąpczyński, 2020).

The results obtained here also indicate that denatured SMEs achieve better qualitative and quantitative performance in their operations than ordinary SMEs, which positively verifies hypothesis H4.

The performance of the surveyed firms is positively and significantly determined to the greatest degree by the level of denaturation in the area of management, which confirms the results of previous studies that emphasize the importance of a dynamic combination of planning and learning in small business (Brinckmann, Grichnik, and

Kapsa, 2010). The importance of more advanced methods of management is supplemented by the configuration of appropriate solutions relating to specialization, including market specialization (Chittithaworn, Islam, Keawchana, and Yusuf, 2011; Royo-Vela, Salazar, and Blanco, 2022) and orientation towards collaboration and relations with outside entities (Lin and Lin, 2016).

This combination enables active organizational learning from small businesses, which, together with growing market differentiation (including internationalization), enables significant financial and growth-related benefits (Hooi, 2021).

Therefore, the results achieved limit the research gap RG4 related to insufficient assessment of the impact of denaturation on small business performance. Presented research indicates that denaturation helps shape a small firm's potential for competitiveness and performance.

Entrepreneurs ought, however, to show caution in implementing solutions characteristic of anti-small business, being sure to provide the appropriate combinations and configurations of ordinary and denatured factors for small business success. For this reason, the results presented also significantly develop the theory of small business professionalization (Ravić, Đekić, and Radić, 2021) by indicating certain configurations of managerial solutions that positively influence SME competitiveness and performance.

6. Conclusions

The results indicate that denaturation occurs within the class of micro, small, and medium-sized enterprises in the European Union. The phenomenon is not universal, applying only to approximately 10% of SMEs, and the extent of its occurrence increases together with the size of the firm.

Denaturation fulfills a significant role in developing the competitive potential and performance of small businesses, which points to the desirability and effectiveness of professionalization of management and the implementation of some typical large-enterprise solutions in the SME sector. The study results also lead to the following theoretical conclusions:

- with certain assumptions concerning the quantitative classification of small businesses, denaturation may be considered in terms of the extent of implementation of certain qualitative solutions characteristic of anti-small business in the areas of management, structure, specialization, autonomy, and scope of market operations;
- denaturation is a measurable and relative phenomenon. It occurs to an incomplete degree: firms in the SME sector still exhibit (though to a relatively lesser extent) certain qualitative features characteristic of small business;

-
- SMEs should not be treated as miniatures of large firms. However, they should only derive particular inspirations from the latter's experiences, seeking specific configurations of the solutions used in large businesses to develop key determinants of market competitiveness and improve long-term performance.

This work contributes to the theory of management studies. It fills four specific research gaps related to the conceptualization and operationalization of small business denaturation in management sciences, empirical verification of the extent of this phenomenon in business practice, and assessment of the impact of denaturation on small business competitiveness and performance.

An important contribution to the development of management studies is the operationalization of the phenomenon of denaturation and the construction of a research tool for its identification and measurement. Based on the results and analysis, it is also possible to draw certain methodological conclusions:

- denaturation may be treated as a dichotomous feature of small firms, but its level is a measurable variable, allowing the internal differentiation of SMEs in terms of the degree of application of solutions characteristic of anti-small business;
- in studies of micro, small, and medium-sized enterprises, it is advantageous to take into account the level of their denaturation, which significantly affects the determinants of small business competitiveness and performance, which may have a significant impact on the results and interpretation of the studies.

I hope that the results presented here will be useful to the owners and managers of those firms in the SME sector that seek opportunities and justification for using more professional concepts and methods of management. The results appear to have the following managerial implications:

- the use of solutions typical of anti-small business must be deliberate, planned, and well thought out since it is a challenge to firms to develop specific denaturation profiles that strengthen their business orientation, help to develop knowledge, flexibility, and readiness for change, and improve business performance in a qualitative and quantitative sense;
- when implementing solutions typical of anti-small business, it is beneficial to make use of outside specialist support (Alagbe, Oladele, Abdullah, Abdullahi, and Mailafia, 2021), which will assist in making objective choices and effectively introducing the solutions that are most advantageous for the firm's long-term (strategic) needs.

Despite the described methodological limitations, this research leads to new theoretical findings relating to the extent, nature, and consequences of the qualitative denaturation of small business. It is planned to continue this line of research,

expecting to produce several new and more detailed findings with both theoretical and practical value.

In analyzing the results obtained and considering the usefulness of the conclusions drawn, one should consider the study's limitations (Geletkanycz and Tepper, 2012). These include methodological limitations resulting from the use of an inductive approach (Popper, 2005) and of cross-sectional studies (Bryman and Bell, 2015).

Limitations also result from the use of a survey method and the technique of electronic questionnaires (Biffignandi and Bethlehem, 2021). Although it was attempted to formulate the statements in the questionnaire as precisely and unambiguously as possible, and although a pilot study was carried out, it may be assumed that some of the questions were understood by respondents erroneously or inappropriately.

The responses may also reflect the subjectivity of respondents' evaluations of reality. It should also be noted that several questions related to complex and multidimensional constructs, where they could refer only to several selected indicators, were simplified. Another weakness of the results is the relatively low fit of the proposed research models. Nonetheless, given the issues' complexity and their dependence on multiple variables that are difficult or impossible to measure, the results carry an acceptable theoretical and applicative potential.

The importance of analyses in small business denaturation is pointed out by Harney and Nolan (2022), describing them as an "important stream of research". Considering it in the specific context of human resource management, they emphasize that small business denaturation extends traditional HRM research to embrace the neglected context of SMEs.

At the same time, the importance of the issues considered points to the need for the research to be continued, enabling deeper results relating to the nature and extent of denaturation and its impact on small businesses' competitive potential and performance.

Interesting directions for further research may include a more detailed analysis of the extent of denaturation and effective denaturation profiles in particular functional areas of small businesses or an analysis and evaluation of the effect of external (environmental) factors on the extent of denaturation. It also appears important to evaluate the effectiveness of denaturing solutions regarding the relationship of inputs to the benefits of firms implementing typical anti-small business solutions in the SME sector.

In the methodological domain, an interesting approach may be triangulation (Flick, 2018) to obtain additional conclusions through a synergic combination of results from qualitative and quantitative investigations. Valuable theoretical and practical

conclusions may also be supplied by using longitudinal studies (Rose, Spinks, Canhoto, 2015) oriented towards obtaining knowledge of the dynamics and permanence of denaturation solutions and the effects of their use in small business management.

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