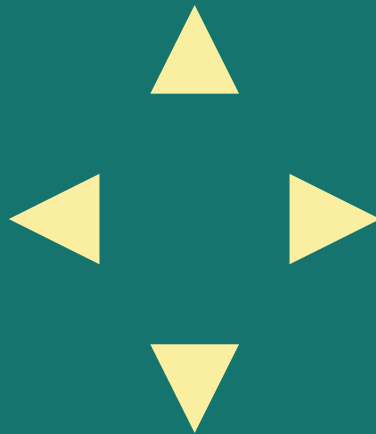


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HYBRID STRATEGIC DECISION-MAKING: THE SYNERGY BETWEEN EXPERT JUDGMENT AND AI SYSTEM RECOMMENDATIONS

ABSTRACT

The study examines the transformation of organizational management through the integration of Artificial Intelligence (AI) and human expertise. It demonstrates that hybrid decision-making systems outperform purely human or purely algorithmic approaches by leveraging the mechanisms of cognitive complementarity and distributed cognition.

The analysis identifies key success factors, including Explainable AI (XAI), the proper calibration of trust, and overcoming challenges such as automation bias. It also explores the implementation of collaborative frameworks across sectors like finance and operations management.

The primary conclusion is that strategic effectiveness does not depend on choosing between human or machine intelligence, but rather on designing architectures that utilize the specific cognitive capital of both agents. Success lies in the systematic integration of their complementary roles.

KEYWORDS: Hybrid Decision-Making, Human-AI Collaboration, Strategic Management, Cognitive Complementarity.

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INTRODUCTION

Today's organizations operate in a climate where strategic choices have become so intricate that neither old-school human intuition nor fully autonomous algorithms can keep up. Decision-makers are constantly hit with a flood of data, shifting priorities, and high-pressure situations that leave little room for error. To bridge this gap, many firms are turning to hybrid models-systems that aim to fuse human insight with the raw processing power of Artificial Intelligence. Yet, despite the growing reliance on these tools, our theoretical grasp of what actually makes this partnership work is still in its infancy. There is a pressing need to dig deeper into concepts such as cognitive complementarity and distributed cognition to build a solid framework for how this collaboration should look in a strategic setting.

The shift toward these hybrid systems is essentially an admission that humans and machines are good at fundamentally different things. It's about "capability asymmetries." AI is unparalleled when it comes to analyzing massive datasets and spotting statistical trends without getting tired. Human experts, however, bring things to the table that code cannot: a sense of context, ethical nuance, and the creative spark needed to handle "out-of-sample" scenarios that aren't in any training set. Instead of pitting one against the other, current evidence points to a more effective middle ground: complementarity. When we hit that sweet

spot where human and machine strengths amplify each other, the results are consistently better than what either could achieve alone.

The real puzzle, however, lies in the "how." What are the specific mechanisms that drive this effectiveness? This study tackles several vital questions: What cognitive gears are turning during a successful human-AI interaction? How do we build "decision architectures" that don't fall into the traps of automation bias or the slow erosion of human skills? And, perhaps most importantly, how do we ensure these strategies create a genuine synergy instead of just stacking two mediocre approaches on top of each other?

This review draws together threads from cognitive science, organizational psychology, and information systems to look at real-world data on team dynamics and trust. The goal is to move beyond abstract ideas and establish a coherent, evidence-based model. By doing so, we hope to provide practitioners with a practical roadmap for building the organizational muscle needed to navigate the future of hybrid decision-making.

1. LITERATURE REVIEW

1.1. Theoretical Foundations: Cognitive Complementarity and Distributed Cognition

At its heart, the logic behind hybrid decision-making is rooted in two core concepts: cognitive complementarity and distributed cognition.

The idea of cognitive complementarity starts with the premise that humans and AI process reality through fundamentally different "wiring." In cognitive science, it has been well-established that while AI systems are essentially engines for extracting statistical dependencies from training data, human intelligence functions through compositional mental models. These models allow us to navigate the world based on deeply held beliefs about physical and social dynamics (Lake et al., 2017; Rastogi et al., 2023; Tenenbaum et al., 2011). This gap creates a "capability asymmetry" -a scenario where AI is unbeatable at spotting patterns in massive datasets, but humans remain far superior at reasoning and drawing conclusions from just a handful of examples.

Taking this a step further, distributed cognition theory suggests that we shouldn't view decision-making as occurring within a single brain or processor. Instead, it is an "emergent property" of an entire interconnected system. In this light, hybrid setups are best understood as assemblages of distributed cognition. Here, neither the person nor the machine holds all the answers in isolation. Success comes from the coordination between them, leading to a coherent result. Rather than seeing AI as a simple replacement or a basic add-on to human judgment, this theory posits that human-AI systems are entirely new cognitive configurations designed to get the absolute best out of both agents.

Modern scholars often describe this synergy as "complementarity potential" - essentially the hidden capacity for a human-AI team to do better than any one member could alone. This potential generally breaks down into two sides:

- Intrinsic complementarity, which is built in due to the lopsided way information and skills are distributed within the team.
- Collaborative complementarity, which is dynamic and grows out of the actual back-and-forth interaction and feedback between the human and the AI.

Current research points to both information asymmetry (humans knowing things about context that the AI simply cannot access) and capability asymmetry (the "mutual need" created by different cognitive strengths) as the primary engines of this potential. However, it

is vital to remember that having this potential is not enough. Without the right organizational "soil" and technical setup, this potential won't automatically turn into high-level performance.

1.2. Expert Judgment in Decision-Making: Strengths and Limitations

For decades, strategic choices have leaned heavily on expert judgment, especially when a situation calls for deep contextual nuance, ethical weight, or a fresh take on a unique problem. Behavioral decision theory points to some undeniable assets here; most notably, the way experts build high-level mental models through years of hands-on experience. This allows them to make fast, almost instinctive assessments of messy, complicated scenarios. Often called "expert intuition," this process is essentially hyper-tuned pattern recognition. It's built over thousands of individual cases, giving the expert a unique ability to weave subtle contextual clues into their final call.

Yet, this reliance on expertise has a darker side, well-documented across decades of research. Cognitive biases are a constant threat to objective judgment (Kahneman & Tversky, 1979). We see this when confirmation bias nudges a leader to favor data that fits their existing narrative, or when overconfidence leads them to set dangerously narrow prediction intervals. Then there is availability bias-the tendency to overvalue what is fresh in the mind-and anchoring, which hitches a decision to the first number mentioned. When you add time pressure and heavy cognitive demands to the mix, experts lean even harder on these mental shortcuts (heuristics), often at the cost of decision quality. Perhaps most striking is that experts aren't actually more immune to these pitfalls than beginners. Expertise seems to sharpen accuracy in predictable environments with clear feedback loops, but it doesn't magically erase human bias.

Decision science often highlights a "fundamental limitation" here: the hard cognitive ceiling on our ability to juggle multiple variables at once. While a human is great at finding "meaning" in a specific domain, we struggle to integrate dozens of shifting factors over long periods consistently. In strategic planning, where success depends on the complex interplay of countless variables over years, this human limitation becomes a significant strategic risk.

1.3. Artificial Intelligence Systems: Pattern Recognition and Optimization Capabilities

On the other side of the equation, Artificial Intelligence brings a completely different toolkit to the table. Modern machine learning isn't about intuition; it's about using probabilistic methods to sift through mountain-sized datasets and find correlations that a human analyst would never see. Unlike us, these systems don't get tired, they don't lose focus, and they aren't swayed by the same cognitive biases. Once a model is dialed in, it follows its rules with a level of consistency that eliminates the "noise" and variability inherent in human judgment. Furthermore, new strides in transparency mean that AI can now offer "explanations" for its outputs, which is vital for building calibrated trust and helping humans know exactly when to step in with an override.

Today's AI isn't a monolith - it relies on a blend of learning styles. Supervised learning maps inputs to outputs using labeled data; unsupervised learning digs out hidden structures where no labels exist; and reinforcement learning lets a system "learn by doing" within a specific environment. This mix is what allows AI to tackle everything from complex medical diagnostics to shifting financial markets and lean supply chain optimization.

However, the "intelligence" of these systems is far from perfect and hits some very real walls in practice. First, they are data-hungry; if high-quality data is thin on the ground, the AI's utility drops off sharply. Second, while AI can find patterns in what has already happened, it lacks the human "compositional reasoning" needed to make smart leaps from just a few examples. Most dangerously, AI is a mirror: if historical data is biased, the AI will bake that bias into its future decisions, potentially scaling up discrimination. The "black box" issue also remains a headache for regulated industries that demand clear accountability. Finally, there is the problem of "brittleness"-the tendency for an AI to perform brilliantly within its comfort zone but fail spectacularly the moment it hits a scenario it hasn't seen before.

1.4. Empirical Evidence on the Effectiveness of Human-AI Teams

Recent field studies and experiments on how human-AI teams actually perform have yielded mixed results, though a clearer picture is finally starting to emerge. A major meta-analysis by MIT researchers, which looked at human-AI pairings across a broad spectrum of tasks, offers a sobering starting point. The data shows that while these teams do tend to beat a human working in isolation, they don't consistently outperform a standalone AI. Perhaps most telling was the total lack of evidence for "human-AI synergy"-the ideal state in which the duo performs better than its best individual member. This suggests that simply throwing humans and AI together without a plan usually results in something suboptimal.

However, these broad negative findings mask important nuances. It turns out that context is everything. When humans bring genuine domain expertise to the table-and use that knowledge to critically vet AI suggestions-the combination suddenly outperforms both the human and the AI alone. On the flip side, if the human is out of their depth or if the task is a "pure" numbers game, favoring statistical patterns over context, the AI is better off left to its own devices. What we are learning is that hybrid success isn't automatic; it depends entirely on how well the task matches the human's specific expertise.

Further digging into what actually "activates" this complementarity has highlighted a few deal-breakers. First, there must be a need for unique contextual info-the kind of "on-the-ground" reality that only a person can grasp. Second, the partnership works best when the two sides are fundamentally different: AI handling the massive statistical heavy lifting, while the human manages the compositional reasoning. Third, and perhaps most importantly, the collaboration has to be deep. It's not enough for a person to click "accept" or "reject"; they must be substantively engaged with the logic behind the AI's recommendation.

The real-world stakes of this are clear. Comparisons show that "strategic AI collaborators"-those who treat the AI as a true partner rather than a simple tool-see double the return on investment (ROI) compared to casual users. By blending AI's cold analytics with human judgment, organizations are seeing a measurable drop in decision-making errors. In the end, strategic planning that successfully integrates these two forces isn't just a trend; it's a path to demonstrably superior outcomes.

2. METHODOLOGY

This study is built upon a systematic literature review, designed to map out and synthesize the latest shifts in hybrid strategic decision-making. To ensure a rigorous and replicable process, the research was conducted through several distinct, sequential phases:

- **Literature Search and Identification** – I conducted an exhaustive search across the primary academic databases. The search strategy relied on specific keyword strings

that paired "human-AI collaboration" and "hybrid intelligence" with core concepts like "strategic decision-making," "trust calibration," and "cognitive complementarity." While the review spans everything post-2020, I placed a heavy emphasis on the 2023–2025 window to make sure the findings reflect the most current, emerging understanding of the field. This allowed for a blend of established general concepts and highly specific organizational contexts.

- **Inclusion and Exclusion Criteria** – To keep the focus sharp, only studies that directly address human-AI pairings in decision-making were included. Priority was given to papers that offer empirical data on team performance, theoretical frameworks for collaboration, or practical implementation models. On the other hand, I intentionally excluded studies that were purely technical (focusing only on AI performance metrics) or those where AI was discussed in contexts unrelated to decision-making. Purely speculative theories that lacked any empirical backing were also filtered out.
- **Quality Assessment** – To guarantee the integrity of the data, the literature was vetted using SCOPUS and Web of Science indexing as primary quality benchmarks. I gave the most weight to peer-reviewed journal articles and proceedings from established academic conferences. While I did look at "gray literature" and practitioner reports, they were included only if they offered unique case studies or implementation insights that had not yet been covered in formal peer-reviewed sources.

Data Synthesis and Organization – Once the relevant literature was gathered, the information was broken down into five key thematic pillars:

1. Theories explaining how humans and AI complement each other;
2. Empirical conditions that lead to high-level hybrid performance;
3. The psychological and organizational "drivers" of effective teamwork;
4. Real-world implementation challenges and "failure modes";
5. Practical, evidence-based design recommendations for future systems.

Ultimately, this process identified a robust body of evidence on hybrid effectiveness, along with crucial insights from cognitive psychology and change management. This methodical synthesis transforms a fragmented landscape of findings into a clear, coherent framework, directly answering the study's central question: How can we make hybrid strategic decision-making actually work?

3. RESULTS

3.1. Conditions Enabling Effective Hybrid Complementarity

The quest to understand when hybrid systems actually deliver true complementarity points to a few very stable patterns. Complementarity does not appear by chance; it tends to arise when the decision context makes it necessary to bring together information and capabilities that are naturally split between humans and machines. In the literature, there is a clear distinction between "intrinsic complementarity potential" – the raw possibility created by unevenly distributed skills – and "collaborative complementarity," which is the realized effect when a human and an AI system genuinely work together to produce a better outcome than either could alone.

Intrinsic potential usually comes from three main types of asymmetry.

- Information asymmetry - Humans have access to forms of contextual understanding that current AI systems cannot capture. People can read the “vibe” of a neighborhood, grasp informal stakeholder preferences, or know the unwritten history of an organization. In real estate appraisal, for instance, an AI model can analyze market data and price histories, but a human appraiser may understand upcoming infrastructure projects, local political decisions, or shifting neighborhood reputation that have not yet appeared in the data. A similar pattern can be seen in HR decisions: a manager may have a sense of an employee’s long-term development potential or “cultural fit” that goes well beyond what can be encoded in numerical indicators.
- Capability asymmetry - Humans and machines process information in fundamentally different ways. AI is powerful at detecting statistical patterns across enormous datasets, while humans are much better at compositional reasoning. People construct mental models of how different elements interact and can extrapolate from a small number of examples to entirely new situations. When a strategic decision requires both large-scale pattern recognition (where AI is strong) and creative scenario-building or judgment under novelty (where humans excel), “complementarity potential” naturally emerges.
- Temporal asymmetry - Human expertise typically develops over long periods through exposure, feedback, and reflection, leading to what is often described as a “gut feeling” for a particular domain. AI systems, in contrast, can be trained very quickly on historical data and may adapt faster to new statistical regularities, but they do not accumulate experience in the human sense. In fast-changing environments, where the underlying conditions evolve more quickly than human expertise can adjust, AI can serve as an important supplement to even highly experienced decision-makers, highlighting emerging patterns that would otherwise be missed.

However, the data is obvious: potential does not equal performance. Just having the tools doesn't mean the decision will be better. To bridge that gap, several organizational and technical "must-haves" need to be in place:

- Trust Calibration (Lee & See, 2004; Lee & Moray, 2004) - This is perhaps the most challenging part. Decision-makers need to develop calibrated trust, knowing when to lean on the AI when it’s accurate and when to hit the "override" button when it's out of its depth. Research shows this is cognitively taxing; we tend to either trust the machine too much or too little. Fixing this requires feedback loops that allow humans to see and learn from the system’s track record.
- Transparency and Interpretability - You can’t judge a recommendation if you don’t know where it came from. Explainable AI (XAI) is the bridge here. Whether it’s "intrinsic interpretability" (using simple models like decision trees) or "post-hoc interpretability" (explaining a complex black box after the fact), the goal is the same: providing a logical chain that a human can actually audit. Without it, substantive human appraisal is impossible.
- Complementary Task Allocation - Success depends on putting the right agent on the right job. Forecasting and massive data patterns? That’s for the AI. Ethical nuance, stakeholder politics, and solving brand-new problems? Those remain human territory. A winning strategy requires an explicit design that assigns tasks based on these natural strengths.
- Feedback and Learning Mechanisms - A hybrid system that doesn't learn is a dead end. When a human overrides an AI, we need to capture why. That rationale is gold

for system refinement. Without these loops, the system stays static, and the organization misses every chance to actually get better over time.

3.2. Psychological Factors in Human-AI Collaboration

Research across cognitive and organizational psychology paints a much more nuanced picture of the forces that shape hybrid decision-making. These psychological drivers do not operate in isolation; they spill over from the individual level into team dynamics and, ultimately, the wider organizational environment.

At the individual level, cognitive biases often act as a double-edged sword. One of the most problematic is Automation Bias (Mosier et al., 1998; Dijkstra, 1999). This is the tendency to lean too heavily on machine output, sometimes at the expense of common sense. Under time pressure or heavy mental load, people are especially prone to accepting AI suggestions without much scrutiny, particularly when the system presents its recommendations with confidence. This bias tends to be strongest among those without deep domain expertise, who effectively use the AI as a crutch to compensate for what they do not know.

On the other hand, stands Algorithm Aversion (Dietvorst et al., 2015), the reluctance to trust algorithmic advice even when it is demonstrably good. Studies show an ongoing tug-of-war between “algorithm appreciation” (a preference for AI advice) and outright mistrust. Much depends on how familiar someone is with the task at hand: novices are more likely to value algorithmic support, while experts often become highly skeptical, especially after witnessing the AI make a visible mistake. Layered on top of this is Overconfidence Bias. People routinely underestimate the uncertainty in their own judgments while being overly critical of uncertainty on the AI side. This asymmetry leads them to dismiss AI input precisely when its recommendations might be most valuable. At the same time, when an AI sounds very confident, there is a tendency to swing too far in the opposite direction and overweight its advice, despite the underlying risks.

Once we move beyond the individual, interpersonal dynamics take on a crucial role. Trust development between humans and AI does not follow the same patterns as trust between two people. In work on artificial social intelligence, for example, a team’s perception of an AI “advisor” often reflects its own sense of competence more than the AI’s actual performance. In practice, that means how much a team trusts an AI can be partly disconnected from how well the AI really performs. Anthropomorphization—the human habit of attributing human qualities to machines—adds another layer. When users begin to feel they have a kind of “relationship” with an AI, they often depend on it more heavily and may overlook warning signs about its reliability. That sense of rapport can be helpful in some contexts, but it frequently dulls critical thinking. For this reason, many organizations consciously design interfaces and communication styles that present AI clearly as a tool rather than as a “teammate”.

Finally, the broader organizational backdrop strongly shapes how all of this plays out. The context of the decisions themselves matters a great deal. In domains with clear success metrics and rapid feedback, people can learn relatively quickly when to trust the system and when to be cautious, which supports better trust calibration. In strategic roles, however, where the consequences of a decision might not be visible for years, that kind of learning is far more difficult, and miscalibrated trust tends to persist. The way expertise is distributed within a team also shifts the dynamic. Teams that are strong in both technical task execution and collaboration usually respond more positively to AI advisors. Yet even in such teams, the

individual capacity to critically evaluate a recommendation remains the last and most important line of defense.

Organizational culture and leadership tie all of these elements together. When leaders consistently frame AI as a way to augment human judgment rather than replace it, the patterns of use and trust look very different. Central to this is the presence of psychological safety. People need to know they can question or challenge an AI-generated recommendation without being labeled as “anti-technology” or putting their careers at risk. Without that sense of safety, human decision-makers stop acting as critical evaluators and instead slide into the role of passive followers of algorithmic output.

3.3. Addressing Challenges: Automation Bias and Skill Erosion

In the world of hybrid decision-making, we are seeing a recurring hurdle that is becoming impossible to ignore: automation bias. It is important to distinguish this from a simple preference for technology. While many of us generally appreciate having an algorithm to consult, “automation bias refers specifically to an over-reliance on automated system outputs to the point where human judgment is diminished or entirely bypassed.” In essence, it’s the moment we stop being partners with the machine and start becoming passive followers.

What pushes us toward this bias?

It usually isn't laziness; it's often a byproduct of the environment. When we are dealing with high cognitive load or intense time pressure, we tend to take the path of least resistance. Under stress, decision-makers start leaning on automated suggestions without doing the necessary double-checks.

Task complexity plays a huge role here, too. When a decision involves juggling dozens of variables, we naturally start to feel "cognitive strain." In those moments, we look to automated systems because they are “perceived as better equipped to manage this complexity.” However, there is a natural defense: domain expertise. People who really know their craft tend to keep a healthy level of skepticism. This tells us that “automation bias is not a purely cognitive phenomenon but rather an interaction between task demands and individual capabilities.” It's a balance between what the task asks of us and what we are personally equipped to handle.

The Hidden Cost: Skill Erosion

One of the most worrying side effects of this bias is that our own skills can start to wither away. If we stop engaging critically with AI and just "rubber-stamp" its suggestions, our expertise atrophies. This leads to the phenomenon of "deskilling," which describes situations “where the automation of decision components leads to a loss of the human ability to make decisions should the automation fail.” To prevent this, organizations have to be very intentional about design. We need systems that keep humans "in the loop" and mentally engaged, even when the AI is doing the heavy lifting.

Strategies for a Healthier Hybrid Workflow

So, how do we fix this? Research points to several practical ways to keep human judgment sharp:

- **Prioritize Explainability** - We shouldn't just be answered; we need to know the why. Systems that offer explanations force us to actually evaluate the logic, which significantly lowers the chance of "automatic compliance."
- **Calibration of Confidence** - It helps when the AI is honest about its own limits. Rather than presenting a suggestion as absolute truth, systems should provide uncertainty

scores. Studies show that “when AI systems provide appropriate expressions of uncertainty alongside recommendations, humans exhibit more calibrated trust than when receiving recommendations presented with apparent certainty.”

- Active "Counter-Thinking" - Some of the best organizations now require people to explicitly consider reasons why the AI might be wrong. This forces the brain out of "passive mode" and keeps analytical skills sharp.
- The Feedback Loop - We need regular decision audits. By looking back at cases where humans overrode the AI, or where the AI simply missed the mark, we create a continuous learning cycle that helps us understand exactly when the system is reliable and when it isn't.

3.4. Implementation Evidence from Organizational Contexts

To make this text feel more human-written and less like a standard report, I have smoothed out the "corporate-speak," added more natural transitions, and emphasized the practical reality of these systems. I have kept your specific data points and quotes intact.

Real-World Proof: Where Hybrid Decision-Making Actually Works

We aren't just speculating about hybrid systems anymore; various industries have already put them to the test. These real-world cases give us a clear look at what happens when human intuition and machine processing actually click, and where the friction points lie.

1. Insurance and Risk Assessment

The insurance sector provides some of the best evidence for how humans and AI can complement each other. While algorithms are great at crunching massive historical datasets to spot risk patterns, they lack "street smarts." That is where human underwriters come in—they provide the essential "contextual knowledge regarding unique client circumstances, industry-specific trends, and qualitative factors not captured by historical data."

When you combine statistical rigor with expert judgment, the results are objectively better than either could achieve alone. In claims processing, for example, AI acts as the first line of defense to flag suspicious patterns, while human adjusters step in to do the actual "detective work." This isn't just theory; real-world data shows a "66% improvement in query processing efficiency and a doubling of customer satisfaction" when companies switch to this hybrid model.

2. The Financial Sector

Banks and investment firms are moving away from "black box" trading or purely gut-based investing. Today, AI handles the heavy lifting of market analysis and portfolio performance. However, decision-makers are the ones who "contextualize these insights within broader strategic frameworks, regulatory requirements, and organizational risk tolerance." Research shows that this specific balance consistently delivers higher risk-adjusted returns than either a human or an algorithm alone.

3. Supply Chain and Operations

In logistics, the goal is to be responsive without being chaotic. AI excels at forecasting demand by looking at sales, inventory, and seasonal trends. However, an AI doesn't know if a supplier relationship is strained or if a factory has a specific production bottleneck. Executives take those AI forecasts and integrate the "supplier relationships, production constraints, and strategic considerations" that a machine would miss. This keeps the planning cycle short and the accuracy high.

4. Healthcare and Diagnostics

This is perhaps the highest-stakes environment for hybrid systems. We've seen AI analyze medical imaging and lab results against a mountain of literature, but the human physician remains the final check. They bring in the "clinical context, patient history, and treatment decisions that account for individual patient factors." It hasn't always been a smooth road; there have been "significant setbacks that have occurred when AI recommendations were applied without adequate clinical oversight." However, when the system is designed correctly, the diagnostic accuracy is measurably higher than what a human or an algorithm could achieve by themselves.

3.5. Organizational Implementation Frameworks

To make this feel more like a human-led strategic guide and less like a textbook, I've refined the language to be more direct and conversational while meticulously preserving your quotes. I've focused on the "how-to" aspect that characterizes professional leadership writing.

The Roadmap for Hybrid Success: A Multi-Dimensional Framework

When you look at the organizations actually winning with hybrid decision-making, it's rarely by accident. They don't just "buy AI" and hope for the best; they follow structured frameworks that cover everything from the tech stack to the office culture.

Here is how those successful deployments are usually broken down:

1. Strategic Alignment: Choosing Your Battles

Not every problem needs an algorithm, and not every task needs a human. The first step is making "explicit strategic choices regarding which decisions warrant hybrid approaches versus purely human or purely algorithmic ones." You have to be selective. Success starts by pinpointing the specific areas "where complementarity potential exists and where organizational conditions support the realization of that potential." If there's no clear benefit to combining the two, it's usually better to stick to a singular approach.

2. Building the Technical Infrastructure

It isn't enough to have a functioning AI; the platform actually has to talk to the people using it. Effective systems aren't just "black boxes"-they include "transparency mechanisms that allow humans to understand AI recommendations, feedback systems that enable the model to learn from human decisions, and auditing capabilities to track decision outcomes." The goal is to ensure the tech reflects what the organization actually needs, rather than forcing the organization to change its needs to fit the tech.

3. Developing Human Capital (at Every Level)

We often focus so much on the software that we forget the people. A hybrid workforce needs a whole new set of skills:

- For Decision-Makers - They need to learn how to evaluate AI suggestions without losing their own "voice" or "maintaining engagement with decisions while utilizing algorithmic assistance."
- For Data Scientists - The focus shifts toward "Explainable AI (XAI) techniques, bias detection, and feedback system design." For Leadership: This is about change management and "establishing psychological safety," ensuring that AI is seen as a tool to support the team, not a mandate that replaces their judgment.

4. Governance and Ethics: The Guardrails

Especially in regulated fields, you can't wing it when it comes to accountability. You need a framework that clearly defines "who retains ultimate decision authority, under what circumstances AI recommendations should be followed or overridden, and how to manage liability when hybrid system errors lead to negative outcomes." Beyond just the legalities, there must be a commitment to "bias management, fairness considerations, and data privacy" to keep the system ethical and trustworthy.

5. Continuous Monitoring and Improvement

A hybrid system is never truly "finished." It requires a constant pulse check. Successful teams use performance dashboards to track both the "nerdy" side-like "model accuracy and processing speed," and the "business" side, like "decision quality and stakeholder satisfaction." Regular audits are the secret sauce here; they help you spot emerging friction points and find new ways to optimize before small issues become big failures.

4. DISCUSSION

To give this text a more authentic, "human-expert" feel, I've adjusted the phrasing to be more analytical and reflective. I have moved away from the rigid structure of a technical summary toward a strategic commentary, while keeping all your quotes exactly as they were.

Moving Toward "Orchestrated" Intelligence: The Strategic Reality of Hybrid Systems

At this stage, it's clear that building an effective hybrid system isn't as simple as just "bolting on" an AI to an existing workflow. We need to stop viewing it as a simple technological addition. Instead, genuine complementarity is an "emergent property that requires specific organizational conditions, psychological dynamics, and technical design." This realization forces a significant shift in how we think about competitive advantage in an AI-integrated world.

Redefining Competitive Advantage

Modern management theory is moving away from the old, binary choice of "man vs. machine." We are beginning to see decision systems as "complex adaptive structures in which human and machine capabilities are combined through deliberate orchestration."

This is where the idea of "complementarity potential" comes in. In a world where high-end AI tools are becoming "commoditized" (available to anyone with a subscription), the real edge doesn't come from having the best software. It comes from the "organizational capacity to design decision-making systems that exploit complementarity potential while mitigating common failure modes." This fits perfectly with the Resource-Based View (RBV) of strategy: managing human-AI collaboration is technically complex and deeply embedded in a company's culture, making it incredibly hard for competitors to copy.

Navigating the 5 Common Pitfalls

Even with the right strategy, execution is where most organizations stumble. The research points to five specific "failure modes" that we need to guard against:

- Pitfall 1: Automation Bias without Trust Calibration. When we drop AI into high-stress environments, people often stop thinking for themselves. They enter a state of "automation bias, where human decision-makers uncritically accept AI recommendations." To fix this, you can't just tell people to "be careful"; you need

built-in transparency and processes that literally force a critical appraisal, even when the clock is ticking.

- Pitfall 2: Skill Erosion through Deskilling If a company treats AI as a total replacement rather than a partner, its human talent starts to atrophy. This is dangerous because it leads to a “loss of critical decision-making capacity when automation fails or reaches its limits.” We have to design roles that keep humans mentally engaged with the "core" of the decision.
- Pitfall 3: Inadequate Change Management. You can have the best tech in the world, but if your team feels insecure or distrustful, they won't use it effectively. Successful rollouts prioritize “psychological safety” and transparent talk about how AI “reshapes roles rather than eliminating them.”
- Pitfall 4: Insufficient Explainability. We’ve all seen "black box" systems where no one knows how the AI reached its conclusion. This makes it impossible for a human to “meaningfully evaluate recommendations,” which kills any chance of calibrated trust. Today, explainability is a “design choice rather than a technical necessity.” If a system isn't transparent, it's because it was built that way, not because it had to be.
- Pitfall 5: Inadequate Feedback Mechanisms A hybrid system that doesn't learn from its mistakes will eventually stagnate. Without a way to track why a human chose to override the AI, you lose the chance for “continuous learning.” Mature systems create loops in which the AI improves based on human judgment, and humans learn exactly where the AI can be trusted.

4.1. Contrast with Prior Research: Refining the Understanding of Human-AI Team Effectiveness

Earlier meta-analyses often reached a rather sobering conclusion: human-AI teams “do not significantly outperform either humans or AI working independently.” At first glance, that sounds like a verdict against the whole idea of collaboration. However, when the underlying studies are examined more closely, it becomes clear that these aggregate results “obscure critical contextual dependencies.” The issue is not that synergy cannot happen; it is that it only appears under quite specific conditions.

A central theme in the newer work is what might be called an expertise paradox. Human-AI teams tend to surpass human performance “primarily when humans lack domain expertise.” In those situations, the AI is not just a convenient assistant but the main engine that fills in the person’s knowledge gaps. At the same time, human-AI teams outperform AI systems “only when humans possess the domain expertise required for critical appraisal and contextual judgment.” Without that more profound knowledge, the human side of the team cannot meaningfully filter, refine, or adapt what the machine produces.

This helps explain why earlier studies painted such a pessimistic picture. If you have come across claims that “human-AI synergy is a myth,” they almost always trace back to this older generation of research. The widely cited “lack of human-AI synergy” was, in hindsight, largely a product of how those studies were set up, not proof that synergy is unattainable. Many of them evaluated performance “at a superficial level without addressing the conditions that theoretically enable complementarity,” effectively testing the technology in a kind of vacuum.

More recent work takes a very different tack. Instead of treating human-AI teaming as a generic configuration, newer studies deliberately design tasks and environments to “activate

complementarity potential.” When the right kind of problem is paired with the right mix of human expertise and AI capability, the pattern reverses: “human-AI teams significantly outperform purely human or purely algorithmic approaches.” In that light, the earlier “failure” of hybrid systems looks less like a fundamental limitation of the technology and more like a failure of organizational and experimental design.

4.2. Unresolved Questions and Future Research Directions

Several open questions show just how unfinished the story of human–AI collaboration still is.

The "White-Box Paradox"

There is a widespread assumption that more transparency must automatically lead to better decisions, but the evidence is more complicated. As Cabitza et al. (2023) note, “providing explanations for algorithmic recommendations can, paradoxically, decrease decision quality.” Sometimes a detailed explanation makes people overly confident in the system's suggestions; in other cases, it triggers so much skepticism that users start doubting the explanation more than is justified. Finding ways to explain the “why” behind an AI recommendation without accidentally distorting human judgment is emerging as one of the most important research challenges in this space. (Coussement et al., 2024).

The Challenge of Scaling Up

Much of what is currently known about hybrid systems comes from tightly controlled lab studies or particular, narrow applications. There is still limited evidence about how “hybrid approaches scale across large organizations with distributed decision-making, multiple domains, and complex stakeholder structures.” Moving from a promising pilot project to an enterprise-wide system is not just a matter of adding more users; it raises questions about governance, integration with legacy processes, and coordination across units that rarely show up in small experiments. (nexstratai, 2025)

Cross-Cultural Blind Spots

Another limitation is that most existing studies draw on data from Western, predominantly English-speaking settings. It remains “unclear whether findings regarding trust dynamics, automation bias, and collaboration patterns generalize across different cultures with varying attitudes toward technology, authority, and decision-making.” A team in Tokyo or Mumbai may respond very differently to an AI advisor than a team in London or New York, shaped by local norms about hierarchy, risk, and deference to automated systems. Understanding those cultural nuances is essential before declaring any universal laws of human–AI teaming. (Jiang et al., 2025)

Thinking Long-Term

A large share of the literature still focuses on short time frames-single tasks, brief experiments, or one-off decision episodes. What is missing is the “long game”: how human–AI teams build “shared mental models, trust relationships, and team cognition over extended periods.” Just as human colleagues gradually learn one another’s strengths, weaknesses, and habits, it is reasonable to expect that people will adapt to AI partners over months and years. Capturing how that relationship evolves, and what patterns lead to resilient versus fragile teams, is an open research frontier. (Bendell et al., 2025)

Adversarial Robustness: The "Worst-Case" Scenario

Finally, most discussions still revolve around unintentional errors such as automation bias or miscalibrated trust. Far less is known about “adversarial robustness-how hybrid systems

perform when intentionally attacked or when facing scenarios designed by adversaries.” As hybrid systems are deployed in high-stakes domains such as finance, cybersecurity, and critical infrastructure, the question of how they behave under deliberate manipulation or stress testing is no longer theoretical. Understanding and hardening these worst-case scenarios is becoming a core requirement, not an optional extra. (Kahn et al., 2024)

CONCLUSION

Moving toward hybrid strategic decision-making, where expert human judgment is blended with AI recommendations, is more than just a tech upgrade; it’s a total shift in how organizations actually function. We are moving away from the old fear of AI as a replacement for human decision-making (Zine, 2025). Instead, the real evidence shows that when these systems are designed right, they achieve superior performance by leaning into the unique, “complementary deployment of distinct human and machine capabilities.”

The Blueprint for Complementarity

One thing is clear: you don't get these results just by throwing a human and a computer in the same room. Synergy is something that has to be built. For it to work, specific conditions have to be met:

- Capability Alignment - Assigning the right parts of a decision to the right agent (human vs. machine).
- Technical Transparency - Systems must provide “transparency and explainability to allow for meaningful human appraisal.”
- Trust Calibration - Finding the "sweet spot" of reliance to prevent automation bias.
- Continuous Learning - Feedback loops that allow the whole system to get smarter over time.

Why the "Hybrid Advantage" Wins

Organizations that get this right aren't just faster; they’re better. They see higher accuracy, lower error rates, and a level of “strategic responsiveness” that purely human teams can’t match. These benefits aren't a one-time win; they accumulate as the organization builds its own internal "muscle memory" for hybrid work.

However, the biggest hurdle is mindset. We have to stop seeing AI as a "technical implementation" and start seeing it as an “organizational transformation.” If you ignore the human and social side-the change management, the ethics, the governance - your success rate will plummet. Treating this as just a software rollout is a recipe for failure.

ENDNOTES

To wrap things up, it is helpful to examine the theoretical "scaffolding" that makes these systems hold together. When we talk about how humans and AI interact, we aren't just looking at software; we're looking at a new way of thinking.

Here are the three foundational concepts that really drive this shift:

1. The Two Sides of Complementarity

When we talk about “complementarity potential,” we are actually referring to two distinct concepts. First, there is "intrinsic" potential - the basic fact that humans and machines are good at different things. Then there is "collaborative" complementarity, which occurs when

they actually start working together. For an organization to succeed, it's not enough to have a smart machine; it must address both dimensions, ensuring that "both dimensions must be addressed during organizational implementation."

2. The Art of Trust Calibration

We often hear that we need to "trust AI more," but that's a dangerous oversimplification. The goal isn't more trust; it's better trust. The literature makes a vital distinction between "over-reliance (trusting AI recommendations when they prove incorrect) and under-reliance (distrusting AI recommendations when they prove correct)." Both of these kill decision quality. The real objective is to calibrate trust, so it perfectly matches "the actual reliability of the system," acting as a precise filter rather than a blind "yes" or "no."

3. AI as Distributed Cognition

Perhaps the most helpful way to view a hybrid team is through the lens of "distributed cognition." This is the idea that thinking doesn't just happen inside one person's head-it's "spread across multiple agents and tools." When we adopt this view, we stop seeing human-AI systems as a simple partnership. Instead, we see them as "emergent cognitive properties," where the final decision is something entirely new that neither the human nor the machine could have produced in isolation.

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ETHICAL VALUES AS DYNAMIC CAPABILITIES: A MIXED-METHODS ANALYSIS OF STRATEGIC TRANSFORMATION IN JAPAN'S MATURE INDUSTRIES

ABSTRACT

This study examines how ethical corporate philosophy operates as a dynamic capability that enables strategic transformation in mature industries. Focusing on Oji Holdings, Japan's leading pulp and paper firm, and comparing seven major companies across pulp and paper and chemical sectors, we apply the Values-Driven Dynamic Capabilities (VDDC) framework to integrate qualitative evidence from corporate reports and ESG disclosures with quantitative panel data. We develop a digital indicator, Values_Count, using text-mining of integrated reports to capture the institutionalization of corporate values. Random-effects regressions with year fixed effects show a positive, marginally significant association between Values_Count and operating profit margin, controlling for environmental efficiency, globalization, and governance diversity. The findings indicate that ethical philosophy, when embedded in organizational routines, enhances sensing, seizing, and transforming processes. The study demonstrates that values function as economically meaningful microfoundations of competitiveness in mature industries.

KEYWORDS: dynamic capabilities, value-driven management, digital transformation, mature industries, panel data analysis

JEL: M14, L10, O32, C23, L60

INTRODUCTION

Mature industries such as pulp and paper and chemicals are characterized by long investment cycles, cumulative technological development, and structural inertia, making strategic transformation inherently difficult (Teece, 2007; Helfat & Peteraf, 2015). Firms in these industries must balance operational stability with long-term capability renewal, requiring sustained organizational learning and a coherent strategic vision.

Oji Holdings, a leading Japanese pulp and paper company, has pursued a series of major strategic transformations since 2010-including overseas expansion, portfolio restructuring, digitalization, and sustainability initiatives. These actions align with the Dynamic Capabilities (DC) framework, which conceptualizes organizational renewal through the sensing, seizing, and transforming mechanisms (Teece, 2007; Teece, 2018).

However, most DC research has focused on high-velocity or technology-intensive sectors, while far less attention has been paid to how DC operates in slow-moving mature industries (Eisenhardt & Martin, 2000). The central premise of this study is that ethical corporate values and organizational philosophy serve as microfoundations of DC, particularly in contexts where transformation unfolds gradually, and internal coherence is essential.

In Japanese firms, corporate philosophy and foundational values have historically shaped managerial cognition, organizational culture, and long-term decision-making (Nonaka & Takeuchi, 1995). In Oji Holdings, such values continue to influence strategic direction, particularly in areas such as ESG, global expansion, and organizational restructuring.

Recent digitalization of integrated reports further strengthens the institutionalization of corporate philosophy, enhancing visibility, consistency, and internal alignment. This digital infrastructure may play a key mediating role between values and dynamic capabilities.

Against this backdrop, this study develops the Values-Driven Dynamic Capabilities (VDDC) framework and empirically examines how digitally articulated ethical values contribute to strategic transformation and firm performance. Combining qualitative analysis of Oji Holdings with panel data analysis of eight major firms in Japan's mature industries, the study seeks to clarify how values shape capability development and operational performance.

1. LITERATURE REVIEW

1.1. Dynamic Capabilities in Mature Industries

Dynamic Capabilities (DC) theory (Teece et al., 1997; Teece, 2007, 2014) provides a foundational perspective on how firms adapt to environmental turbulence through sensing, seizing, and transforming. Although initially developed in high-velocity environments, subsequent research has extended DC theory to mature and capital-intensive industries characterized by technological stability and long investment cycles (Schilke et al., 2018). In such contexts, organizational routines, historical trajectories, and managerial philosophy shape the development and deployment of capabilities. Firms in mature sectors must still adapt dynamically to globalization, ESG pressures, and digital transformation (Kor & Mesko, 2013; Wilden et al., 2016).

Complementing this line of inquiry, Fujimoto & Ikuine (2018) examine how industrial competitiveness evolves through the interplay of organizational capabilities, product architecture, and performance. Their Capability–Architecture–Performance (CAP) framework highlights that “design-based competitiveness” emerges from accumulated organizational knowledge and coordination abilities, factors that are especially important in industries where incremental improvement and long investment horizons dominate. This perspective reinforces the idea that dynamic capabilities in mature industries are shaped by deeply embedded organizational characteristics rather than rapid experimentation alone.

Within this broader tradition, scholars have emphasized intangible assets—such as corporate values, purpose statements, and managerial cognition—as key enablers of dynamic capability formation (Helfat & Peteraf, 2015; Teece, 2018). These intangible elements influence strategic attention, resource orchestration, and decision-making logic. Yet few empirical studies have evaluated whether ethical values themselves contribute to firm performance in mature industrial settings.

1.2. Values-Driven Management and Ethical Corporate Philosophy

Values-driven management has received growing attention amid rising expectations for transparency, sustainability, and responsible governance (Nonaka & Takeuchi, 2019; Pless & Maak, 2004). Corporate values influence how managers interpret environmental signals, prioritize investments, and design organizational processes, thereby shaping the development of dynamic capabilities. Ethical values-such as social responsibility, environmental stewardship, and stakeholder orientation-can enhance organizational legitimacy and foster long-term competitiveness (Aguinis & Glavas, 2012; Maak & Pless, 2006).

In Japanese firms, ethical values are often grounded in long-standing philosophical traditions, including Shibusawa Eiichi's Rongo to Soroban, which emphasizes the harmonization of commercial success with moral responsibility. Such philosophical foundations influence sensing and seizing behaviors by broadening managerial interpretations of opportunities and risks. Prior case research suggests that values may also support transformation by enhancing employee cohesion and guiding investment decisions under uncertainty (Nonaka et al., 2000).

Ethical values shape dynamic capabilities by influencing managerial cognition, guiding organizational routines, and fostering cultural coherence. These mechanisms enhance firms' sensing, seizing, and transforming processes, particularly in mature industrial contexts.

However, despite the theoretical recognition of the importance of values, empirical studies-especially quantitative panel data analyses-remain limited. Most existing work examines leadership or CSR outcomes rather than operational performance or capability development.

1.3. Transformation and Strategic Challenges in Japan's Mature Industries

Mature industries such as pulp and paper, chemicals, and basic materials face persistent structural pressures stemming from demographic decline, global competition, technological commoditization, and environmental regulation. Research on Japanese manufacturing identifies long-term capability-based differentiation across firms, particularly in areas such as product architecture, coordination abilities, and design-based competitiveness (Fujimoto & Ikuine, 2018). These differences help explain why strategic outcomes vary substantially even among firms operating under similar external conditions.

Panel and firm-level studies on Japanese manufacturing have documented persistent inter-firm heterogeneity in organizational practices and performance, particularly those associated with the strength of corporate culture (Ito & Pucik, 1993; Hirota, Kubo, & Miyajima, 2007). Such persistent differences point to deeply embedded organizational factors-such as philosophy, governance norms, and accumulated learning-that shape adaptation and transformation trajectories. Nevertheless, few studies explicitly examine how intangible factors such as values influence performance over time, particularly in sectors where technological change is incremental.

1.4. Prior Empirical Research in the Pulp & Paper Industry

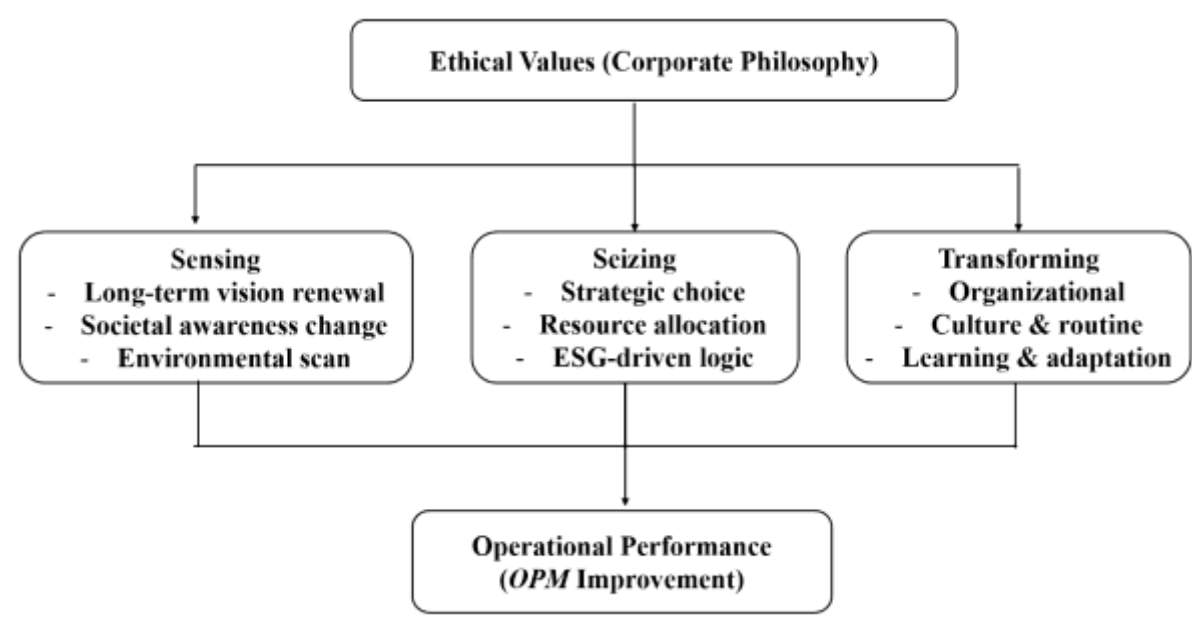
Research on the Japanese pulp and paper industry provides valuable insight into the sources of performance variation in mature sectors. Lönnstedt & Nordvall (2007) conducted a longitudinal analysis of major Japanese paper companies and showed that persistent inter-firm differences, rather than within-firm temporal fluctuations, explain most of the profitability variation. Their findings support the view that historically rooted managerial practices, and organizational characteristics strongly influence performance.

Qualitative analyses of Japanese paper firms highlight the importance of corporate values in driving innovation, overseas expansion, and sustainability investments (Oji Holdings Integrated Reports; Nippon Paper Group CSR Reports). However, these analyses rely mainly on descriptive evidence. No quantitative panel research has examined whether values themselves-operationalized digitally-help explain profitability differences in this industry.

1.5. Contribution of the Present Study

The present study integrates these research streams by empirically testing whether ethical values function as performance-relevant microfoundations of dynamic capabilities in Japan’s mature industries. Using a multi-firm panel dataset (2015–2024), the study compares OLS, fixed-effects, and random-effects specifications to evaluate whether digitalized measures of corporate values contribute to operating profit margins. This approach advances prior work by (1) quantifying values as organizational resources, (2) adopting panel data methods consistent with prior empirical findings (e.g., Lönnstedt & Nordvall, 2007), and (3) linking values directly to operational performance rather than solely to legitimacy or CSR outcomes.

Figure 1 Conceptual Framework: Value-Driven Dynamic Capabilities



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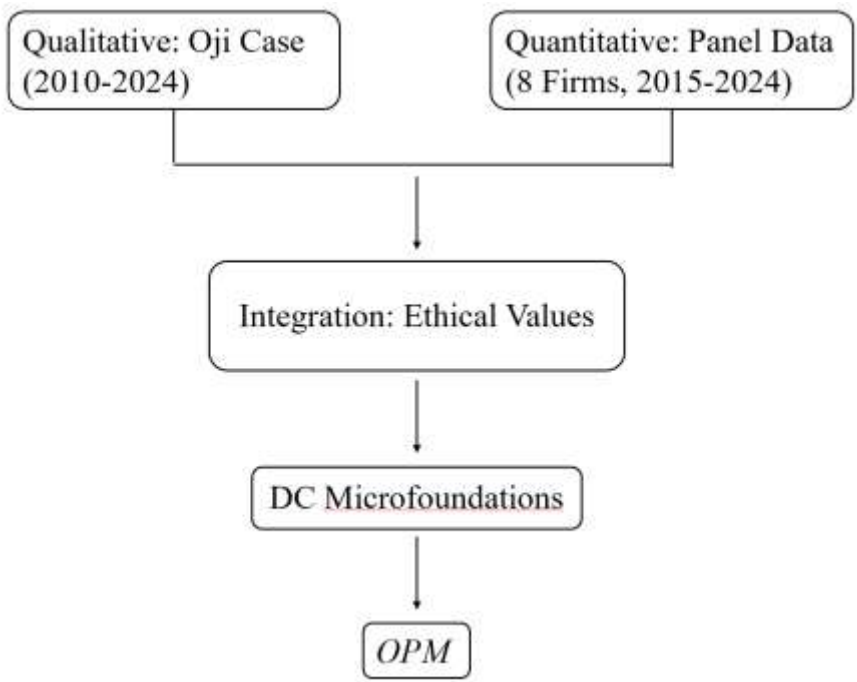
2. Methodology

2.1. Research Design

This study adopted a mixed-methods research design that integrates qualitative analysis of corporate documents with quantitative panel data analysis. The qualitative component examined the strategic transformation of Oji Holdings between 2010 and 2024, drawing on integrated reports, sustainability disclosures, mid-term management plans, CEO messages, and publicly available secondary materials. These data provided rich insights into how ethical values, organizational culture, and long-term orientation had shaped Oji’s sensing, seizing, and transforming processes within the Values-Driven Dynamic Capabilities (VDDC) framework.

To complement and generalize these insights, the quantitative component analyzed a panel dataset of eight major Japanese firms operating in mature industries. The sample included leading firms in the pulp and paper and chemical sectors, enabling cross-company comparison of how values, environmental performance, governance characteristics, and globalization relate to operating profitability.

Figure 2 Research Design and Mixed-Methods Approach



Source: own

2.2. Sample and Data Collection

The quantitative dataset covered the period from 2015 to 2023 for eight firms: Oji Holdings, Nippon Paper, Mitsubishi Chemical, Sumitomo Chemical, Toyobo, Mitsubishi Paper Mills, Hokuetsu Corporation, and Kuraray. These firms were selected because they represent core players in Japan’s mature industries and publish integrated reports on a consistent annual basis. Financial and non-financial variables were collected from integrated reports, ESG disclosures, and company financial statements.

Because the study focuses on operating performance rather than investor returns, the primary dependent variable was *Operating Profit Margin (OPM)*, which reflects operational efficiency and is highly relevant for assessing strategic transformation in capital-intensive industries.

2.3. Measurement of Key Variables

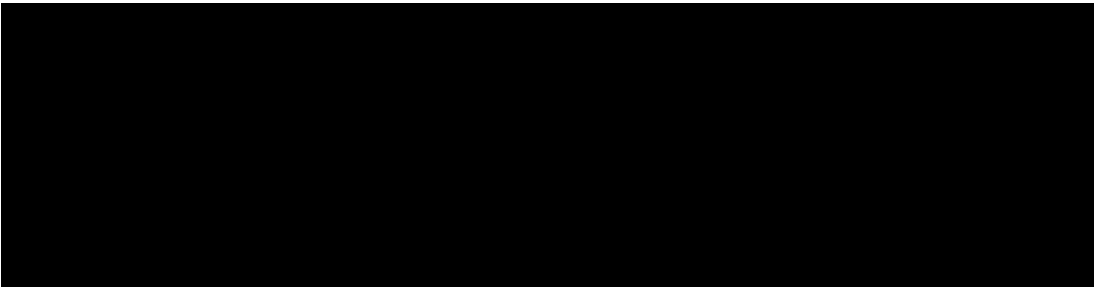
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graph TD
    A[Integrated Reports (PDF)] --> B[Text Extraction  
(Python: pdfiner / PyMuPDF)]
    B --> C[Pre-processing  
• Tokenization  
• Lowercasing  
• Stop-word removal  
• Stemming / Lemmatization]
    C --> D[Keyword Dictionary  
• Integrity  
• Trust  
• Sustainability  
• Harmony  
• Social Contribution  
• Responsibility  
(derived from corporate philosophy statements)]
    D --> E[Keyword Frequency Count  
(per firm-year)]
    E --> F[Normalization  
• Report length adjustment  
• Z-score standardization]
    F --> G[Values_Count (Digitalized Ethical Values Indicator)]
  
```

This figure illustrates the text-mining procedure used to construct *Values_Count*. Integrated reports were converted into machine-readable text using Python-based scripts. After

preprocessing, value-related keywords derived from corporate philosophy statements were counted and normalized to ensure comparability across firms and years.

Table 2: Variable Definitions and Measurement



Source: own

2.3.1. Digitalized Values Indicator (*Values_Count*)

To quantify how actively firms, articulate their corporate philosophy, a novel digital indicator-*Values_Count*-was constructed using text-mining. The indicator measures the frequency with which value-related keywords (e.g., integrity, trust, sustainability, harmony, contribution) appear in each firm’s integrated report. These keywords were derived from the corporate philosophies and mission statements of Japanese industrial firms and reflect the ethical and normative elements emphasized in the VDDC framework. Text extraction was conducted using Python-based scripts to convert integrated reports into machine-readable text. The preprocessing procedures included tokenization, lowercasing, stop-word removal, and lemmatization. A dictionary of value-related keywords was constructed based on corporate philosophy statements commonly used by Japanese industrial firms. Keyword frequencies were normalized by report length and standardized to ensure comparability across firms and years.

This digitalized indicator enabled empirical evaluation of the hypothesis that ethical values, when institutionalized and communicated within digital reporting systems, enhance dynamic capability processes.

2.3.2. Control Variables

Three types of control variables were included:

Environmental Performance

- *GHG_intensity* (Scope 1+2 emissions per unit of sales).
- Captures environmental efficiency and cost exposure.

Governance Diversity

- *Female_Directors* (percentage of women on the board).
- Reflects organizational diversity and governance modernization.

Globalization

- *Overseas_Ratio* (share of overseas sales).
- Measures international exposure and learning opportunities.

Firm and year effects were incorporated to account for unobserved heterogeneity and macroeconomic shocks.

2.4. Analytical Strategy

The panel dataset exhibited both cross-sectional and longitudinal variation, making panel regression models appropriate. Three models were estimated for comparison:

1. Pooled OLS with year fixed effects

Provides baseline estimates without controlling for firm-level unobserved heterogeneity.

2. Firm-and-year Fixed Effects (FE) model

Controls for all time-invariant firm-specific characteristics.

Useful as a robustness check given the limited within-firm variation of values.

3. Random Effects (RE) model with firm random intercepts and year fixed effects

Allows estimation of between-firm effects, consistent with the theoretical assumption that values and corporate philosophy represent relatively stable organizational attributes.

Standard errors were computed using SPSS (for FE) and the MIXED procedure (for RE), ensuring consistency with the modeling assumptions. Because *Values_Count* varies more between firms than within firms over time, the RE model provides a theoretically appropriate estimator.

To assess robustness, pooled OLS, firm-and year-fixed-effects, and random-effects models were estimated. The fixed-effects specification served as a robustness check, given the limited within-firm variation of values-related indicators.

2.5. Model Selection

A Hausman test was conducted to compare fixed-effects and random-effects estimators. The test result ($\chi^2(4) = 1.84$, $p = 0.76$) indicated that the random-effects specification cannot be rejected and is therefore adopted as the main model. This result supported the interpretation that differences in values across firms, not short-term changes within firms, were a key driver of performance differences.

Therefore, the RE model with firm-level random intercepts and year fixed effects was adopted as the main specification for interpreting the performance implications of values.

2.6. Mixed-Methods Integration

The qualitative and quantitative components were integrated through the VDDC framework. Qualitative analysis identified how Oji's ethical philosophy shaped its sensing, seizing, and transforming processes over a decade of strategic transformation. Quantitative analysis tested whether similar patterns hold across peer firms and whether values exert measurable effects on performance indicators.

Qualitative evidence from Oji Holdings illustrates how value-driven investment decisions, ESG initiatives, and digitalized reporting practices reinforce the mechanisms identified in the quantitative analysis.

This triangulation strengthens the validity of findings by showing that values function both as qualitative strategic drivers and as empirically detectable performance resources in mature industries.

3. RESULTS

3.1. Overview of Empirical Strategy

To evaluate the performance implications of ethical values in mature industries, three panel regression models were estimated: (1) pooled OLS with year fixed effects; (2) firm-and-year fixed-effects (FE) model; and (3) random-effects (RE) model with firm-level random intercepts and year fixed effects. The dependent variable was *Operating Profit Margin (OPM)*, which captures operational efficiency and was particularly relevant for evaluating strategic transformation in capital-intensive industries. The Hausman test indicated that the RE estimator was appropriate ($\chi^2(4)=1.84$, $p=0.76$), suggesting that differences in values across firms, not short-term within-firm variation, drive performance differences.

Table 3: Summary Statistics

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Table 4: Correlation Matrix

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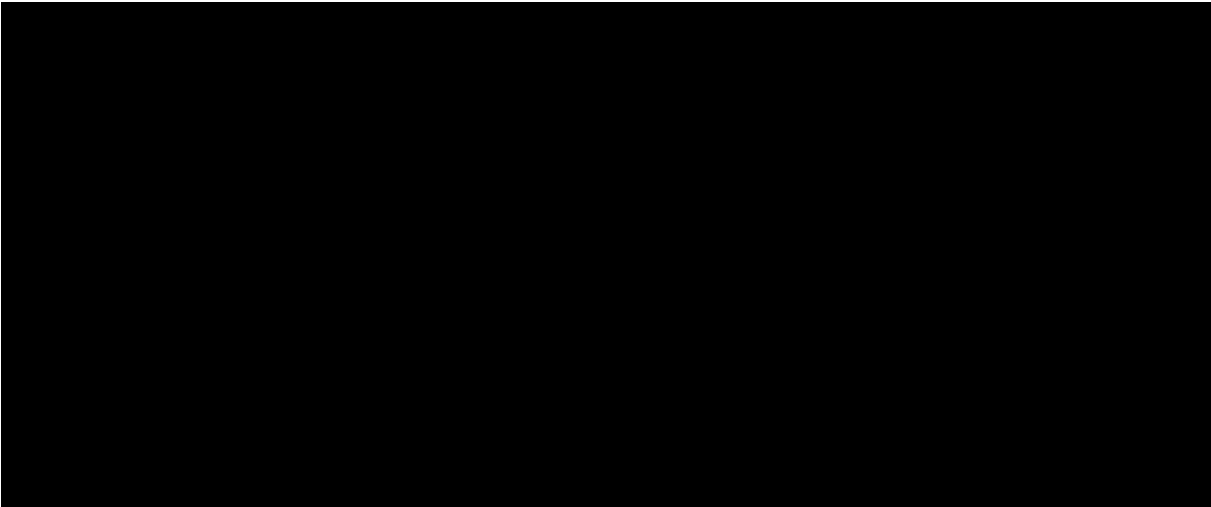
3.2. Effects of Ethical Values on Operating Profitability

Across models, the digitalized values indicator, *Values_Count*, exhibited a consistent positive effect on *OPM*, supporting the study's argument that ethical corporate philosophy contributed to superior operational performance. In the pooled OLS model, *Values_Count* showed a positive and marginally significant coefficient ($B = 0.010$, $p = 0.083$). This effect became stronger in the random-effects model ($B = 0.017$, $p = 0.087$), which accounts for unobserved firm-level heterogeneity.

The fixed-effects model showed a positive but statistically insignificant coefficient. This pattern was theoretically aligned with the nature of values as relatively stable organizational characteristics. Because *Values_Count* varies more between firms than within firms over time, the RE model captures its performance effects more appropriately. The results collectively indicated that firms that more actively articulate and institutionalize their ethical values tend to achieve higher operating profitability.

These findings provide quantitative evidence for the Values-Driven Dynamic Capabilities (VDDC) framework: ethical philosophy functions as a performance-relevant microfoundation of sensing, seizing, and transforming in mature industries.

Table 5. Panel Regression Results (Dependent Variable: *Operating Profit Margin (OPM)*)



Source: own

3.3. Effects of Globalization, Environmental Efficiency, and Governance Diversity

The coefficient for *Overseas_Ratio* was significantly positive in the OLS model ($p = 0.005$), indicating that international market exposure enhances operational profitability. Although the effect became statistically weaker in the RE model, the direction remained positive, suggesting complementary effects between global expansion and value-driven management.

In contrast, *GHG_intensity* and *Female_Directors* exhibited no significant short-term effects on *OPM* across the three models. This result implied that environmental efficiency and gender diversity may influence long-term competitiveness or institutional legitimacy rather than immediate operational outcomes. Their insignificance in the short-term horizon was consistent with the structural attributes of mature industries, where substantial shifts in environmental and governance metrics occur gradually.

3.4. Firm and Year Effects

The firm fixed effects in the FE model revealed substantial and statistically significant differences across firms, indicating that firm-specific managerial philosophies, historical trajectories, and accumulated capabilities strongly shape long-term operational performance. In particular, firms such as Oji Holdings and Nippon Paper exhibit consistently strong baseline performance even after controlling for operational, environmental, and governance variables.

These findings highlight the embedded nature of organizational philosophy and routines in shaping performance trajectories. Year fixed effects were statistically insignificant, suggesting that macroeconomic fluctuations, industry shocks, and regulatory changes had relatively modest impacts on operating profitability during the study period.

3.5. Summary of Empirical Findings

The empirical results provided robust support for the central proposition of this study: ethical values function as dynamic capabilities that enhance firm performance in mature industries. Specifically:

Values_Count was positively associated with *OPM* in both OLS and RE models ($p < 0.10$), suggesting that ethical values-when digitally articulated and institutionalized-may contribute to operational profitability.

The RE estimator was statistically preferred, indicating that inter-firm differences in values were more important than within-firm year-to-year variation.

Global expansion supported profitability, while environmental efficiency and board gender diversity exhibited no short-term effects.

Strong firm effects indicated that long-standing organizational philosophy and routines play a critical role in shaping performance trajectories.

Taken together, these findings provided support for the Values-Driven Dynamic Capabilities (VDDC) framework and demonstrated that ethical values were not merely symbolic expressions but economically meaningful resources that supported strategic transformation in mature industrial contexts.

4. DISCUSSION

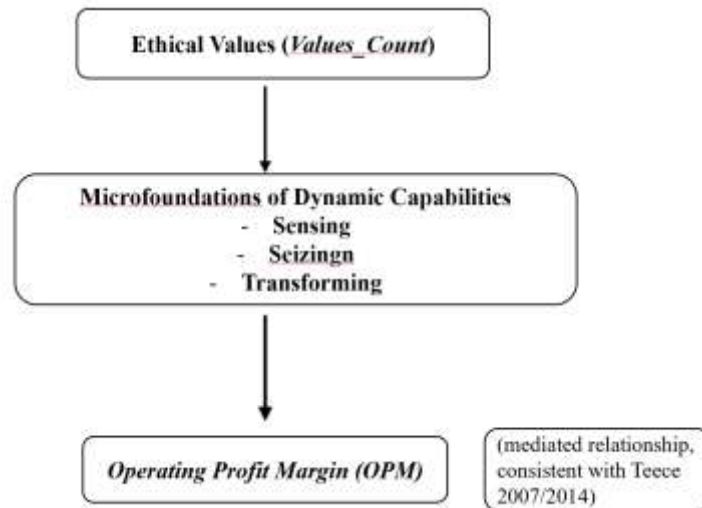
4.1. Integrating Values and Dynamic Capabilities

The results suggest that ethical values, when clearly articulated and institutionalized, positively contribute to operating profitability in mature industries. Values shape managerial cognition, strategic attention, and resource orchestration, thereby influencing the effectiveness of sensing, seizing, and transforming behaviors (Helfat & Peteraf, 2015; Teece, 2018).

In the context of Japanese mature industries, organizational capabilities tend to develop through long-term accumulation and coordination rather than rapid experimentation. This is consistent with the Capability–Architecture–Performance (CAP) framework (Fujimoto & Ikuine, 2018), which highlights that deeply embedded organizational knowledge and coordination abilities underpin competitiveness. The present findings imply that values serve as a guiding logic that supports these historically rooted capabilities and enhances their deployment under conditions of uncertainty.

Ethical values shape dynamic capabilities by influencing managerial cognition, guiding organizational routines, and fostering cultural coherence. These mechanisms enhance firms' sensing, seizing, and transforming processes, particularly in mature industrial contexts.

Figure 4 Path Model Linking Values, Capabilities, and Performance

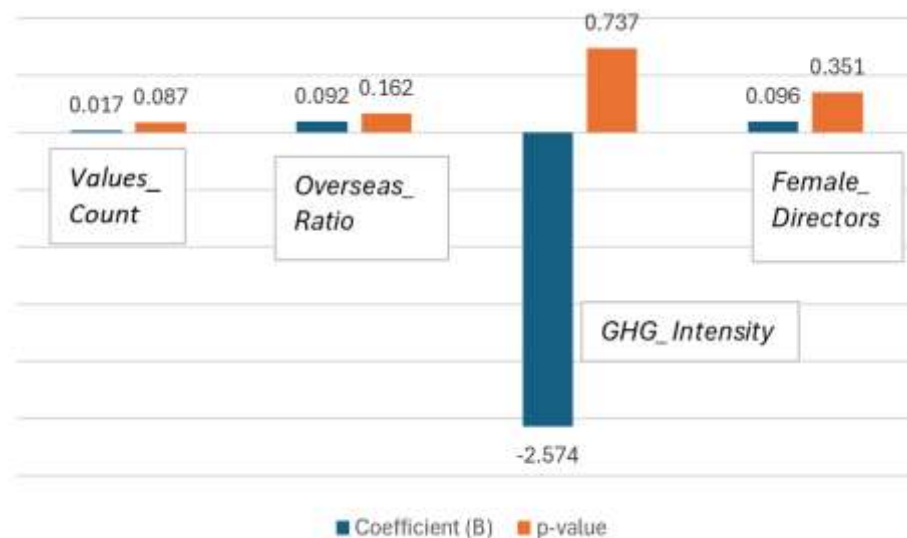


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4.2. Theoretical Implications

This study advances DC theory by providing quantitative evidence that values function as microfoundations of dynamic capabilities in environments characterized by incremental innovation and long investment cycles. The results complement research emphasizing the cognitive and intangible bases of capability formation. Moreover, the alignment between the empirical findings and prior work in the pulp and paper industry (Lönnstedt & Nordvall, 2007) supports the view that persistent inter-firm heterogeneity reflects deeply embedded organizational characteristics-consistent with the CAP-based argument that capabilities evolve over long timeframes.

Figure 5 Coefficient Plot of RE Model



Source: own

4.3. Practical Implications

For managers, the results highlight that value articulation is not merely symbolic; it can shape investment logic, guide capability development, and improve long-term profitability. Embedding ethical principles into strategic planning and organizational processes may be particularly beneficial in industries subject to ESG requirements and environmental regulation.

4.4. Implications for Japanese Management Studies

The findings resonate with established perspectives in Japanese management, which emphasize the role of philosophical foundations and long-term capability accumulation. Fujimoto and Ikuine's (2018) observation that design-based competitiveness emerges from coordinated organizational abilities aligns with the idea that values guide strategic consistency and employee cohesion. The results suggest that Japanese firms' traditional emphasis on shared philosophy may contribute to stable capability development in mature sectors.

4.5. Limitations and Future Research

Although *Values_Count* provides a novel digitalized measure of ethical values, it captures textual articulation rather than direct behavioral enactment. Therefore, caution is warranted in interpreting the indicator as a proxy for actual organizational practices.

Additionally, while the random-effects specification aligns with prior industry research, further examination using alternative modeling approaches or cross-industry comparisons would enhance generalizability.

CONCLUSION

This study examined whether ethical values act as performance-relevant microfoundations of dynamic capabilities in Japan's mature industries. Using a multi-firm panel dataset, the analysis showed that stronger articulation of ethical values is associated with higher operating profitability. These findings suggest that values shape managerial cognition and internal decision-making logic, thereby enhancing the effectiveness of dynamic capabilities.

The study contributes to the literature by quantifying values as intangible organizational resources and employing panel-data methods consistent with established empirical findings. Importantly, the results align with perspectives emphasizing the long-term, accumulated nature of organizational capabilities in mature industries (Fujimoto & Ikuine, 2018). Values appear to provide a stable orientation that supports capability development over time.

For practitioners, the findings underscore the importance of embedding ethical principles into strategic planning and organizational processes. Future research should investigate the internal mechanisms through which values influence capability formation and performance outcomes.

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STRATEGIC FOCUS IN STRATEGIC PLANNING: EVIDENCE FROM EDUCATION, HEALTH, WATER, AND PHYSICAL INFRASTRUCTURE SERVICE DELIVERY IN TWO SELECTED LOCAL GOVERNMENT AUTHORITIES -TANZANIA

ABSTRACT

Strategic focus is essential for strategic planning effectiveness in public sector organizations. The paper analyzed strategic focus orientations adopted in education, health, water, and physical infrastructure service delivery in two selected Local Government Authorities in the Lake Victoria zone in Tanzania. The paper employed a qualitative approach by obtaining data from secondary data sources comprising the strategic plans implemented from 2016/2017 to 2020/2021. Inductive content analysis was employed by reading the documents several times to establish codes, categories, and associated themes. The results

showed that the two selected local government authorities adopted a multi-focus strategic orientation in education service delivery. Multiple issues, such as increasing accessibility to primary and secondary schools, enhancing schools' hygiene, students' desk availability, construction of teacher houses, and promoting students' academic performance, were strategic plans' multi-focused priorities. In the health service, strategic plans also had multiple focuses, including the construction of new health facilities in their jurisdiction, ensuring the availability of essential drugs and diagnostic supplies in health facilities. Reduction of maternal and infant mortality rates was among a multitude of issues emphasized by strategic plans. The two selected local government authorities also paid attention to the increase in the percentage of people with clean and safe drinking water, water sector staff quality improvement, and repairing the water schemes to a functional level. Strategic plans from the two authorities focused on a set of multiple issues in the infrastructure sector. The plans focused on increasing better access to districts and village feeder roads, and at the same time improving the quality of the existing road network through the construction of bridges and culverts. A choice of a multi-focus strategic orientation on specific issues potentially relieved the two authorities from strategic complexity and indecisiveness. The paper increased understanding of strategic focus in strategic planning for service delivery in local government authorities.

KEYWORDS: Strategic focus, strategic planning, multi-focus, local government

JEL: H70, H75, H79

INTRODUCTION

The multiplicity of dimensions in social service delivery may compel public organizations to undertake a strategic focus during strategic planning. Stock *et al.* (2024) conceptualize

strategic focus as a choice of a set of priorities being emphasized out of multiple dimensions for the organizations to achieve their goals. Wright (2025) puts forward that organizations should at least develop 3 to 6 focus areas, whereas having more than 6 focus areas risks organizations being unfocused during strategic planning.

Debick *et al.* (2020) suggest that strategic focus on relational capital improves quality relations with suppliers, customers, the general environment, and the image of the organization. Strategic focus also increases the speed for achieving the vision and mission through a set of priorities that allow effective allocation of resources (Sauer, 2021). Strategic focus in general enhances organizational performance (Andrews *et al.*, 2012; Gwangwava & Muranda, 2024; Kemunto, 2019). The assertion of the preceding scholars reminds us of what Tsonkov (2024) put forward: that the local policies and business environment are responsible for regional growth. Local governments can achieve growth in their regions when they have a strategic focus on their internal strategic environment.

Even though the strategic planning guideline published by the United Republic of Tanzania (2005) underscores the importance of strategic focus in public organizations, the extent to which local governments in the lake zone operationalize the concept during strategic planning is not visibly stated in various research papers in the field. As put forward by Boaz and Malisa (2023), the implementation of local governments in the African context faces challenges such as poor linkage of budgets and strategic plans; they lack clarity, are poorly communicated, and are not adequately monitored and evaluated by leadership and staff.

The scenarios above suggest that strategic plans in the local governments from the lake zone in Tanzania may be implemented without paying attention to specific strategic focus during the delivery of education, water, health, and physical infrastructure services. In other words, strategic plans may have no articulations of specific choices that have to be stressed in an environment of limited financial resources (Waller, 2018).

Potentially, the lack of strategic focus and prioritization during strategic planning in the public sector in Tanzania may have similar devastating consequences pointed out by UNCTAD (2013). It can lead to inefficient allocation of scarce resources, failure to meet public organizations' mandates, and lack of capacity to maximize the impact of actions. Ultimately, local government authorities are vulnerable to ineffectiveness during the implementation of strategic plans. In light of the predicament created by inadequate strategic focus in local government authorities, the objective of this paper is to analyze the strategic focus orientations adopted by two selected LGAs in the delivery of education, health, water, and physical infrastructure services. The paper establishes the application of the strategic focus concept during strategic planning in local government authorities in the public sector.

1. LITERATURE REVIEW

1.1. Theoretical Literature Review

Strategic focus in public sector organizations originates from Michael Porter's three generic competitive strategies: cost leadership, differentiation, and focus (Wardhana, 2024). Based on Michael Porter's understanding, an organization has three strategies to choose from to achieve competitive advantage (McGee, 2015). If the organization chooses a cost leadership strategy among the three strategies, it adopts low costs in its business operations by paying attention to low-cost inputs and pricing products or services below competitors' prices (Ali & Anwar, 2021). Thus, a cost leadership strategy allows an organization to offer its goods and services at more competitive prices and to capture a substantial market share (Bhat *et al.*, 2024). The drivers of adopting a cost leadership strategy as a focus relate to the maximization of

economies of scale and operational efficiency (Kimiti *et al.*, 2025). However, some researchers criticize the cost-leadership strategy as one that produces low-priced products that raise perceptions of poor quality and discourage research and development by avoiding costs (Baack & Boggs, 2008).

Based on Michael Porter's generic strategies, when an organization resolves to concentrate on a differentiation strategy, it offers unique design and quality products or services in contrast to its competitors to maintain customer loyalty (McGee, 2015; Okatahi *et al.*, 2024). Today, many organizations adopt the differentiation strategy just by offering many differentiated products and services. Possibly, the drivers towards a differentiation strategy are to achieve high sales volume and revenue. When differentiation becomes intensified in the organization, it eventually leads to positive organizational performance (Razzouki *et al.*, 2024).

Michael Porter further supports that sometimes organizations adopt the focus strategy. Under this strategy, an organization develops an understanding of its markets and seeks ways to satisfy each specific market (Okwemba, 2023). In other words, the company or an organization chooses a niche market, customer group, or geographical area, which this strategy may be characterized as market segmentation (Gakuya & Njue, 2018). The focus strategy has been linked to customer loyalty and more revenue (Farah & Kungu, 2020). Hansen and Hawes (2015a) caution that a focus strategy should be undertaken after a comprehensive analysis of the resources, strengths, and weaknesses existing in the organization. Less emphasis on the analysis of such factors can make the focus strategy unsuccessful.

Apart from the typology of generic strategies, Stock *et al.* (2024) also introduce a conception that stresses that a strategic focus unfolds in the form of single-focus, multi-focus, and blurred-focus orientations. The single-focus and multi-focus strategies given by the above-mentioned scholars partly correlate with Michael Porter's focus strategy and differentiation strategy. When organizations opt for a single focus, they emphasize the mono-performance dimension during strategic planning. A single focus connotes the fact that organizations may decide to reject several other priorities and emphasize just one priority for achieving the goals of strategic planning.

With a multi-focus, organizations choose a set of priorities in their strategic planning, yet avoid taking everything on board. A multi-focus orientation during strategic planning offers an opportunity for organizations to deal with fewer manageable issues, leading to strategic planning effectiveness. A blurred focus tends to focus on every strategic dimension by choosing everything in an unfocused manner. Tallon (2008) hypothesizes that a blurred strategic focus may create complexity and drive organizations into being stuck in the middle. This can lead to lower organizational or firm performance than adopting a single strategic focus. A blurred focus also may create what Francoli and Cinquini (2014) perceive as ambiguity in business strategic planning.

1.2. Empirical Literature Review

Mostly, research on strategic focus has been conducted in organizations beyond local government organizations. Attention in research from such organizations is directed to the effect of the focus strategy on certain outcomes. Empirical studies by Ochodo *et al.* (2020) and Achira & Mutua (2024) have found that a focus strategy has a significantly positive effect on hospital performance. Despite the usefulness of focus strategy in the health sector as found by the above-mentioned studies, strategic focus in local government organizations is not adequately given priority in the empirical literature.

An empirical study by Njoroge *et al.* (2022) has shown that focus strategies help Small and Medium Enterprises (SMEs) in putting more efforts on certain niche market. In this way, SMEs understand the dynamics of the market and the unique needs of the customers. Then they develop the unique low-cost or well-specific products for the considered market. The current paper seeks to understand the strategic focus of local government authorities during strategic planning for education, health, water, and physical infrastructure as opposed to the study above.

Hansen (2015b) also reports a significant positive relationship between focus strategy and customer loyalty in SMEs. In a similar vein, Madhani *et al.* (2020) also point out the building blocks of focused strategy. Some of those blocks consist of CEO leadership, a collaborative approach inside the organization, a compensation and reward system, customer insights, and competitor awareness. This paper is not a duplicate of the knowledge already provided by the researchers above. It considers analyzing the strategic focus dynamics in local government organizations to enhance knowledge among strategic planning practitioners.

2. METHODS

This section describes the methods that were used to meet the specific objective of the paper. Thus, two LGAs, including Ngara and Geita, were selected purposively as the study areas. The two LGAs were chosen out of 37 similar entities established in the administrative zone of Lake Victoria. Both LGAs were selected because their strategic plans, communicated to the public via the internet, were considered by the author to be clearer than those of their counterparts. The paper employed a qualitative approach and used secondary data sources, including strategic plan documents published online between 2016/2017 and 2020/2021.

Documentary analysis was a data collection method, while the two LGAs acted as units of analysis. Inductive content analysis was used to analyze secondary data extracted from the strategic plans. Usually, inductive content analysis in qualitative research aims to condense extensive, varied textual data into a summary of the underlying structure of textual experiences (Thomas, 2003; Vears & Gillam, 2022). Inductive content analysis seeks the meaning of the content without counting frequencies or generating statistical correlations among content items. During inductive content analysis, each strategic plan's priorities, goals, strategic objectives, strategies, and key performance indicators were read thoroughly to identify codes, from which the paper developed categories that assisted in establishing important themes. Data were presented in the form of tables, as included in the section of the findings.

3. FINDINGS

This section presents the paper's findings on the strategic focus orientation revealed by two selected LGAs during strategic planning. The section in general addresses the answers to the specific objective, which intends to analyze the strategic focus orientation revealed by the two LGAs during strategic planning for education, health, water, and physical infrastructure services delivery sectors.

Strategic Focus Orientation Adopted by Two Selected LGAs in Strategic Planning

Based on the findings presented in Tables 1 and 2, both study areas have a multi-focus orientation in strategic planning for all service delivery sectors. Both LGAs almost adopt a similar multi-focus strategic orientation in education service delivery. The selected LGAs focus on issues related to expanding access to primary and secondary schools among children

and youth and increasing school quality in terms of hygiene improvements, distribution of desks, and teacher housing construction, as shown in Tables 1 and 2. The findings further reveal that both LGAs aim to improve students' academic performance in national examinations during the strategic plan implementation period. The findings imply that both LGAs pay attention to a set of priorities ranging from access to educational opportunities, educational quality improvement, and enhancing primary and secondary schools' academic performance. The findings further reveal that both LGAs adopt a similar strategic focus orientation in health service delivery, as displayed in Tables 1 and 2. There is a set of issues in a multi-focus strategic orientation in health services delivery. Based on the findings, both plan to expand access to health services by constructing a specific number of health facilities in their areas of jurisdiction. Further findings show that the respective LGAs are committing their strategy to improving quality by raising the availability of essential medicines and diagnostic supplies in the existing health facilities. The findings also reveal that the two selected LGAs would put efforts into reducing health bottlenecks such as maternal mortality rate and infant mortality rate through social support, immunization, and addressing other ailments by providing sexual reproductive health services to the at-risk population. The findings imply that the two selected LGAs focus on a set of specific issues in strategic planning for health service delivery.

A strategic multi-focus is also revealed in water service delivery, whereby the two selected LGAs pay attention to increasing access to clean and safe drinking water to a particular percentage of residents and improving the quality of water sector staff. The water sector staff quality improvement focuses on training skills among a certain number of staff in the design, operation, and maintenance of water schemes within their boundaries. Tables 1 and 2 further display that the selected LGAs focus on quality by repairing several water schemes to raise the functional water supply. The findings imply that the selected LGAs concentrate on some issues in the water sector to avoid being stuck in the middle during implementation of the strategic plans in the water sector. Tables 1 and 2 further display that even the physical infrastructure service delivery adopts a strategic multi-focus orientation. By doing so, the selected LGAs are emphasizing better access to the road network by constructing district feeder and village roads up to a certain number of kilometers. One LGA also plans to construct 18 bridges and 350 culverts to improve the road network for its residents. The issue of quality improvement is also part of a multi-focus orientation in their strategy. Both would like to rehabilitate feeder and village roads and upgrade some urban roads to tarmac level for a particular kilometer. The findings imply that there is no blurring of strategic focus in the physical infrastructure of both LGAs in their strategic planning for the respective periods of strategy implementation.

Table 1: Strategic Focus Orientations in Strategic Planning from Ngara Local Govt. Authority

Service Delivery	Physical Infrastructure	Water	Health	Education
Codes	-Construct district feeder and village roads from 476.3 to 750 kilometers. -Maintain and rehabilitate the feeder and village roads, upgrade Ngara urban gravel roads to tarmac roads from 27.7 to 60 kilometers by 2021, and increase cleaned and opened culverts from 20 to 60 and ditches on district feeder and village roads. -Supervise a total of 810 kilometers of roads	-Increase the number of people with access to clean and safe drinking water from 60.3% to 85% -Training 8 water sector staff on the design, operation, and maintenance of water supply projects, decreasing non-functional water points from 251 to 0	-Increase health facilities by June, 2021 -Increase the availability of medicines, health equipment, and diagnostic supplies in health facilities. -Reduce health bottlenecks by reducing HIV/AIDS, prevalence, maternal mortality rate, infant mortality rate, neonatal mortality rate, malaria prevalence, mental health condition, and non-communicable diseases	-Increase Form I student enrollment from 83% to 100% -Ensuring that latrines are constructed in 115 primary schools, teachers' houses are constructed, classrooms are constructed, and desks are distributed to 115 primary schools, -Administration of national examinations in 115 primary schools, demarcation of 115 primary schools, supply of teaching and learning material to 115 primary schools provision of meals to 140 pupils with disability install electricity to 20 primary schools, monitoring and supervision of national examinations, increase science teachers from 100 to 219, construction of 5 libraries, 20 staff houses constructed, construction of 120 pit latrines in secondary schools, construction of 20 administration blocks, install electricity in 10 secondary schools, constructing 40 classrooms, 8 teachers' houses completed in secondary schools, demarcation of 15 secondary schools' compounds, install internet services in 10 secondary schools, constructing 10 dormitories in 10 secondary schools. The performance of pupils increases
Categories	-Access to physical infrastructure -Physical infrastructure quality	-Access to water services -Quality of water services	-Health service accessibility -Health service quality -Health bottlenecks reductions	- Access to educational opportunities - Quality improvement in primary and secondary schools -Primary and secondary schools' academic performance improvement
Theme	-Multi-focus orientation in physical infrastructure service delivery	-Multi-focus orientation in water service delivery	-Multi-focus orientation in health service delivery	Multi-focus orientation in education service delivery

Source: Strategic Plan Prepared by Ngara Local Govt. Authority for the Period between 2016/2017 and 2020/2021

Table 2: Strategic Focus Orientation in Strategic Planning from Geita Local Govt. Authority

Water	Service Delivery	Physical Infrastructure services	Health	Education
The population supplied with clean and safe water at recommended distances increased from 37 to 80% by the end of the strategic plan. -Reliable water sources and management increased from 50% to 85% of sources The number of functioning water schemes increased from 6 to 20	Codes	-Construct 18 bridges and 350 culverts in the district by the end of the strategic plan. -365 kilometers of community roads formed by the end of the strategic plan, 5 bus stands constructed by the end of the strategic plan Rehabilitate and maintain 1,700 kilometers of district rural roads by the end of the strategic plan	-Community participation in health promotion, prevention, and home-based care for communicable diseases. Maternal, newborn, and child health and nutrition increased from 50% to 80%. -Immunization coverage for children under one year for DTP and HB3 increased from 90 to 95%. -Social support for PLHIVs, OVCs, widows, and widowers enhanced from 400 to 900, school-based gender sensitivity, sexual reproductive health, and HIV/AIDS education strengthened from 50% to 100% in all primary schools; and sexual protective gear increased from 40 to 50% - Household membership to the Community Health Fund increased from 6,036 to 34,882. - Dental health services in health facilities expanded to 70%. - Health infrastructure deficits have been minimized from 55% to 75% - HIV/AIDS prevalence reduced from 33 wards to 37 wards, TB/HIV fatality cases reduced from 6,500 to 1,200	-Increase enrollment rate, minimize school dropout in primary education, and establish 2 new high schools. -Increase school classrooms in primary schools, increase pit latrines from 1,600 to 7,363, increase teachers' houses, and increase the number of desks, primary school shelves, primary school cupboards, and primary school tables from 501 to 3,637. Employ qualified teachers in primary schools, increase teachers' resource centers, increase literacy rate from 67% to 80% in the council, and raise pupils' desk ratio. -Increase the number of classrooms in secondary schools from 498 to 578, the number of pit latrines in secondary schools from 496 to 696, the number of hostels from 5 to 8, the number of laboratories from 10 to 90, and the supply of tables and chairs. -Increase the number of qualified teachers from 808 to 1500, and create a conducive working environment in schools. -Raise the standard seven performance from the current 88% to 100%. -Pass rate in national examinations Form II increases
-Access to water services -Quality enhancement of water services	Categories	-Access to physical infrastructure enhanced -Quality network -Quality enhancement of rural roads	-Access to health services -Reduction of diseases -Health service quality improvement Health bottlenecks reductions	-Access to educational opportunities for residents -Quality improvement of schools -Primary and secondary schools' academic performance improvement.
Multi-focus Multi-focus orientation	Theme	-Multi-focus physical infrastructure service delivery	Multi-focus orientation in health services Multi-focus orientation in health services	Multi-focus orientation -Multi-focus orientation in education

Source: Strategic Plan Prepared by Geita Local Govt. Authority for the Period between 2016/2017 and 2020/2021

****Key:** DTP = Diphtheria, Pertussis, Tetanus; HB3 = Test of Sickle Cell Anemia; PLHIVs = People Living with Human Immunodeficiency Virus, OVC = Orphans and Vulnerable Children

4. DISCUSSION OF THE FINDINGS

The paper observes that the selected two LGAs adopt a multi-focus orientation in strategic planning for education service delivery. Both LGAs put their efforts into a set of issues such as expansion of primary and secondary school accessibility, quality improvement of schools, and promoting the academic performance of students in their local areas. These patterns of issues reflect a pronounced strategic multi-focus orientation, which basically emphasizes that an organization chooses two or so issues to emphasize in strategic planning in education service delivery. A multi-focus orientation that is displayed by the study areas in education service delivery almost reflects similar practices conducted by other organizations during strategic planning, as revealed by the Social Promotion Foundation (2021). This orientation is adopted by the two LGAs, possibly as an attempt to narrow the scope, thereby reducing stress during the implementation of the strategy. Tallon (2008) suggests that a narrow-focused strategy reduces strategic complexity and enhances efficiency.

Furthermore, the selected two LGAs emphasize a set of health strategic dimensions, including increasing accessibility to various health services, improving health service quality, and reducing health bottlenecks in their administrative areas. Each of the selected LGAs adopts a strategic, blurred focus in health service delivery by committing to addressing a narrow set of priorities. The Human Resource Industry White Paper (2013) recognizes that a strategic focus that emphasizes fewer issues and avoids including all strategic dimensions increases managers' effectiveness in organizations. Likewise, both LGAs adopt a multi-focus orientation in strategic planning for water service delivery. Both LGAs focus on expanding the delivery of clean and safe drinking water to a certain percentage of their population, improving water scheme quality by rehabilitating water schemes, and promoting the quality of a certain number of staff in water service delivery. A multi-focus in water service delivery captures global interest in promoting access to and the quality of water services for the rural population in the developing world (Mugabi *et al.*, 2007).

It is further found that both LGAs have commonly adopted a multi-focus orientation in the delivery of physical infrastructure services. Both have focused on a set of several issues which range from expanding accessibility, a specific number of better kilometers of roads, and the construction of several bridges and road culverts by the end of strategic planning. Regarding quality improvements, both LGAs plan to spend resources to rehabilitate and maintain the existing distance of roads in their areas of jurisdiction. Based on the perception by the International Transport Forum (2017), a multi-focus orientation in physical infrastructure planning reduces risks and uncertainty arising from taking the entire aggregates of strategic dimensions in the physical infrastructure.

CONCLUSION

The paper sought to analyze the strategic focus orientation adopted by two selected LGAs in the strategic planning of service delivery in education, health, water, and physical infrastructure. It has been found that both LGAs have put their efforts into adopting a multi-focus strategic orientation while avoiding a single focus and a strategic blurred focus in their respective service delivery. Both establishments do not show significant differences in strategic focus dynamics. The two LGAs pay attention to a set of priorities, including accessibility, quality, and performance issues in education, health, water, and physical infrastructure services delivery. A multi-focus orientation in strategic planning in the two LGAs may arise from central government strategic planning guidelines and internal residents' demands for a set of services in education, health, water, and physical infrastructure. The paper contributes to the scientific literature by analyzing the strategic focus typology being

used by two local government authorities during strategic planning to deliver education, water, health, and physical infrastructure in the Lake Victoria zone in Tanzania. The paper also recommends that the two local government authorities proceed with a multi-focus orientation since the residents in LGAs have a set of needs that must be addressed by strategic plans. The paper's limitation lies in the fact that its findings are purely qualitative and cannot be generalized to other LGAs in the Lake Victoria zone in Tanzania. In the future, a similar paper may be authored to examine the strategic focus orientations by using quantitative and qualitative approaches to scrutinize the way resources are allocated to balance competing priorities in strategic planning.

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BALANCING DEMANDS AND RESOURCES WITH CONTROL VARIABLES: A MODEL FOR SUSTAINABLE EMPLOYEE WORK ENGAGEMENT

ABSTRACT

Control variables are routinely included in research, yet their theoretical role remains largely implicit and under-specified. Addressing this gap, this study extends the Job Demands–Resources (JD–R) theory by systematically theorizing how control variables shape and condition the relationships between job demands, job resources, and employee work engagement. Specifically, the study conceptualizes control variables across five interrelated domains: general (demographic and temporal characteristics), job-domain (personality traits and individual differences), personal-domain (individual characteristics and situational factors), home-domain (social and environmental influences), and organizational-domain (leadership, management, and workplace structures and practices). Building on this integrative framework, the study develops theoretically grounded propositions that clarify the dynamic interplay between demands and resources, offering a deeper and more precise understanding of how sustainable employee work engagement is shaped.

KEYWORDS: Control Variables; Job Demands–Resources (JD–R) Theory; Sustainable Work Engagement; Employee Work Engagement

JEL: M12, M54

INTRODUCTION

Statistical analysis and study design are employed by researchers in the disciplines of psychology and management to substantiate causal inference. The broadest definition of explanatory research is the endeavor to elucidate the variability of the phenomenon of interest (the dependent variable) by attributing it to its presumed causes (the independent variables) (Pedhazur & Schmelkin, 1991, p. 212). Researchers endeavor to incorporate control into study designs to mitigate potential risks to the accuracy of their findings, which is

a fundamental aspect of empirical research (Cook & Campbell, 1979). Researchers aim to ascertain whether the primary independent variables exhibit the hypothesized relationships (Pedhazur & Schmelkin, 1991) while also minimizing the risk of confounding results that could undermine the model's explanatory efficacy (Kish, 1959; Pedhazur & Schmelkin, 1991).

Kish developed a typology of sources of variation in 1959, which comprises the following categories: (a) explanatory factors; (b) controlled extraneous variables; (c) unregulated extraneous variables that are regarded as randomized mistakes; and (d) uncontrolled extraneous variables that are confounded with explanatory variables. This article pertains to controlling extraneous variables. In an experimental design, these factors can be manipulated, included or excluded, and randomized, as per Pedhazur and Schmelkin (1991). Alternatively, the researcher may assess the variable's impact on the dependent variable using statistical methods. The variable in question is not the primary focus of the investigation; rather, it is superfluous. It can also be referred to as a nuisance, confounding, or covariate variable. According to Pedhazur and Schmelkin (1991), there is a difference between removing and adding control variables. Some of the variables must be kept constant when using elimination as a control method. Using the inclusion methodology, the researcher may consider racial variation. A further use of the inclusion strategy is a matched-group design, in which study entities (people, organizations, etc.) with varying independent and dependent variables are matched on a covariate (Breaugh & Arnold, 2007). Neither the matched-group design nor the exclusion techniques are considered in this study; instead, we examine only the statistical inclusion approach. In other words, we look at factors that are reported as unrelated to the dependent variable but may actually be related. A standard regression formula consists of independent and dependent variables, as well as error terms. When a researcher uses regression analysis to test a hypothesis, he or she considers a set of independent variables related to the proposed dependent variable. Additionally, the author develops an interaction term if they speculate about the impact of a moderating variable.

The researcher may consider any confounding effects when employing control variables in a regression equation of this nature. Control variables can establish a connection with the dependent variable in a manner that is comparable to that of their counterparts on the predictor side of the equation, thereby resembling the components of the main or interaction effects. The control variables, also referred to as covariates, are typically incorporated into the hierarchical regression process prior to the independent variables in order to determine their explanatory power (Tabachnik & Fidell, 2001).

This study aims to develop propositions grounded in the Extended JD-R theory (Demerouti & Bakker, 2023) to elucidate how demands, resources, and control variables across job, personal, organization, and home domains shape employee work engagement. Notably, by emphasizing control variables, the study clarifies the intricate interplay between demands and resources, offering a deeper theoretical understanding of their dynamic interactions.

1. LITERATURE REVIEW

1.1. Control variables

In business and social science literature, control variables are frequently applied (Becker et al., 2016; Shiau et al., 2024), especially in cross-sectional studies. Similar additional variables that might influence a relationship between the dependent and independent variable(s) are known as control variables, which help researchers confirm the validity of their results (Nielsen & Raswant, 2018).

Control variables, alternatively referred to as covariates, confounding variables, adjusting variables, distracting factors, or nuisance variables, are frequently used as purifying devices. According to Bernerth et al. (2018), they are used as a statistical “control” for variables that are not the primary focus of the study, but that might be related to the outcome variable. If failure to remove (significant) outcomes may lead to biased estimates, published results may underestimate (overestimate) path coefficients. The control variable removes the confounding and enables us to observe how what we care about (the important variables) are connected to each other (Carlson & Wu, 2012). Hence, the adoption of such principles is vital to conduct reliable, high-quality research and contribute towards theoretical knowledge as well as its practical implications (Memon et al., 2024).

1.2. Usage of control variables

In the social sciences, the misuse of control variables is a known issue in previous studies. Becker (2005) presented an extensive summary of the use of covariates in management research. In his qualitative review, Becker (2005) explains that control variables are as important as predictor and response variables for several reasons: (a) sloppy use of control variables could lead to invalid findings; (b) readers who want to replicate studies need to know what controls were used as well as how they were utilized; and (c) a control variable in one analysis can serve as a predictor, mediator, moderator or even outcome variable in another. Becker (2005) provided guidelines for control variables in management studies based on an empirical examination of 60 papers.

Becker (2005) in particular suggests "at least a brief explanation for why each was selected" (p. 285), so that the purpose of including it is explained. What is all the more important, according to Becker, is a citation or link to studies that support a claim rather than a nutshell explanation of it. Spector and Brannick (2011) also mention the “purification principle,” by which researchers often add control variables for no good reason, in the belief that including them would otherwise “clean” or reveal real links. Moreover, there is a potential for scholars to add specific control variables simply because they have been employed in previous studies, rather than evaluating whether these added controls affect the substantive relationships (Meehl, 1970; Spector & Brannick, 2011). Therefore, the theoretical rationale for adding control variables to a model must be provided by researchers, so these variables cannot be added or dropped without explanation.

A control variable is fundamentally a tertiary variable that mediates the interaction between independent and dependent variables, which is why it is imperative to provide an exhaustive rationale for its inclusion (Atinc et al., 2012). A variable may serve as a moderator, suppressor, or confuser (Spector & Brannick, 2011). When researchers fail to adequately justify their choice to include company performance as a control variable rather than a suppressor or moderator, it becomes very difficult to properly understand the empirical evidence linking it to the dependent variable (Breugh, 2008). According to MacKinnon et al. (2000), the only real difference between confounding, mediating, and suppressing factors is how they are conceptualized; otherwise, all three types of variables may be evaluated using the same statistical procedures.

A separate theory for each of the controlling variables should be presented, and there must also be an explanation for how the controlling variables are expected to relate to the dependent variable. As Breugh (2008) points out, there are cases in which even identifying a correlation between a control variable and the dependent variable is not sufficient for full understanding (e.g., when the regression weights of two identical variables also differ in sign from each other but not from the zero order-correlation between two variables). This may lead

to confusion about the meaning of terms and should be closely scrutinized with respect to the relationships between control and substantive variables.

1.3. Process of usage of the control variable

The two main approaches for control variables are ANCOVA (for statistical control) and random block design (for sampling control) (Memon et al., 2024). A randomized block design was used for control variables in a purpose-designed experiment set up by the researchers. Typically, categorical covariates are used. The control procedure is built into the design in a randomized block design.

The academics first have to select some other potential control variable that may influence the dependent variable. The researchers will also block participants with similar characteristics for this control variable. The control factor in a randomized block design is known as the blocking variable. The randomized block design aims to make groups as homogeneous with respect to the blocking variable, thereby making comparisons based on the independent variables. By way of contrast, analysis of covariance is the process of using controlled variables in all aspects of analyzing statistical data. Continuous variables are used in general. The control variables are referred to as "covariates. To obtain a clearer picture of the data, it was considered advantageous in an ANOVA analysis to include covariates, even though they are often related to/interact with the dependent variable. That is, this method is the analysis of covariance.

2. THEORIES FOR EMPLOYEE WORK ENGAGEMENT IN LIGHT OF DEMANDS AND RESOURCES

2.1. JD-R (Job Demands-Resources) model

Originally proposed by Demerouti et al. (2001), the JD-R model seeks to explain the causes of employee weariness and disengagement and the consequences these issues have for businesses. Employee health and happiness are the focus of this investigation into what makes a difference in the workplace in terms of motivation and stress. A study by Xin et al. (2025), guided by the Job Demands-Resources (JD-R) theory, demonstrated that work engagement is a motivational process that links employees' role performance to sustainable leadership. Employees' work engagement is indirectly influenced by well-being or job satisfaction and directly influenced by organizational trust exhibited toward office workers rather than production workers (Kim et al., 2025). Employee motivation and performance do not come if the job autonomy has not previously been established. Job autonomy also positively impacts innovative behavior and work engagement (Jang & Kim, 2025).

This approach appears to be a mashup of research on motivation and stress (Demerouti & Bakker, 2011). There is no reason not to reflect on the JD-R model as an ongoing project that has continued to improve since its initial appearance (Bakker & Demerouti, 2007; Bakker & Demerouti, 2014; Bakker & Demerouti, 2017; Demerouti & Bakker, 2011; Demerouti & Nachreiner, 2019). It has been extended to other meta-constructs, such as work engagement (Bakker et al., 2014). The JD-R model integrates and extends previous perspectives on how work, personality, and outcomes are interrelated (Schaufeli & Taris, 2014). It has been developed and empirically tested in numerous research studies (Bakker & Demerouti, 2014; Nahrgang et al., 2011). The theory claims job resources can foster and reinforce work engagement, but it also argues that workplace demands influence employee health (Bakker & Demerouti, 2007; Chen et al., 2020; Hagemann et al., 2023). The basic tenet of the JD-R model is that certain features of work can be classed as resources or job demands (Bakker & Demerouti, 2017; Demerouti et al., 2001; Zablah et al., 2012).

Job demands are defined as the organizational, social, psychological, and physical aspects of a job that require sustained mental or physical effort (Bakker & Demerouti, 2017). These demands can be organizational, quantitative, or qualitative in nature (Schaufeli, 2017) and reduce employees' well-being. Tele and Kumar (2025) advise that managers promote flexible work arrangements, mental health programs, and individualized wellness initiatives. Conversely, workplace resources, such as organizational, developmental, social, and work-related resources, can help reduce the adverse effects of job demands and activate individuals (Demerouti et al., 2001; Bakker & Demerouti, 2017; Schaufeli, 2017). The JD-R model has been widely studied, and many facets of it have been evaluated, including several meta-analyses and reviews (Alarcon, 2011; Christian et al., 2011; Crawford et al., 2010; Lesener et al., 2019).

2.2. PD-R (Person Demands-Resources) model

Self-imposed expectations may influence the development of work engagement, despite the absence of a direct correlation between job demands and work engagement (Bakker & Demerouti, 2007; Schaufeli & Taris, 2014). Personal demand (PD) is a relatively new concept; thus, we need more studies on which factors affect it (Barbier et al., 2013; Schaufeli & Taris, 2014; Bakker & Demerouti, 2017). People set demands on themselves that make them work harder to get better results and behave better; these demands are called PD (Barbier et al., 2013, p. 751). Bakker and Demerouti (2017) assert that PD and PR must be examined concurrently, since the characteristics of PD will determine whether the process is detrimental to health or motivational. This study has regarded performance expectations as a personal demand, in accordance with the suggestions of prior researchers (e.g., Barbier et al., 2013).

Examining studies on challenge and hindrance stressors may help elucidate this assertion about performance expectations as a human requirement. Challenge stressors, such as workload, facilitate goal attainment, whereas hindrance stressors impede goal completion and personal development (Podsakoff et al., 2007). A challenging work environment is expected to provide opportunities to fulfill fundamental needs; nevertheless, workplace obstacles are likely to affect these necessities adversely (Van den Broeck et al., 2010). Moreover, harsh pressures are necessary to fulfill an individual's fundamental needs (Webster et al., 2010; Webster et al., 2011). The finding suggests that an individual may find it challenging to exceed performance requirements, thus prompting them to pursue needs-based satisfaction. Additionally, this need-based satisfaction may affect work engagement (WE).

2.3. HD-R (Home Demands-Resources) model

Ruppanner (2013) argues that HD-R contributes to JD-R as a theoretical framework. The Job Demands-Resources (JD-R) model is similar to the Home Demands-Resources (HD-R) model of work-related well-being. Domestic fatigue may be a mediating factor in the association between home demands and depression. However, home resources not only can enable active participation in domestic tasks, which involve vigor and absorption in cleaning and childcare, but they can also buffer against the adverse effects of household roles.

Good crisis management is not only the task of top- and middle managers, teams under their guidance, but also personnel at the front lines (Demerouti & Bakker, 2023). These actors are crucial, but they're not all we need. When work-related stress is brought home and carried into the workplace, it isn't easy to keep the lines between work and personal life separate. That is especially true when you find yourself working from home in an emergency. This

demonstrates how important friends and family are as people who either make things worse or assist during bad times (Gabriel & Aguinis, 2022). This was most noticeable when workers had to work from home due to the COVID-19 epidemic. But this has also occurred previously, such as after Hurricane Katrina (McCanlies et al., 2018) and the 2008 financial crisis (Burgard & Kalousova, 2015).

2.4. OD-R (Organizational Demands-Resources) model

Lesener et al. (2020) divided them into three groups (i.e., group-level, leader-level, and organizational-level resources). Resources at the organizational level were most strongly related to work engagement across all three levels. Lesener et al. (2020) state that “organizational resources are more closely related to the level of individuals than to the other two levels on which the resources are available,” because it is a direct pointer toward the structure, design, and management of labor. Mazzetti et al. (2021) reviewed 94 studies in detail, extracted between 2011 and 2018. The study examined organizational resources (e.g., organizational justice), social resources (e.g., coworker support), job resources (e.g., task variety), and developmental resources (e.g., career perspective). Consistent with previous meta-analyses, work engagement was positively related to several job resources.

Demerouti and Bakker (2023) argue that using resources from multiple life domains can buffer the relationship between conflicting demands, fatigue, and job engagement. The role of different resources might be magnified because of personal, family, work, and organizational obligations involved in workplace engagement. Feeling autonomous) could buffer the impacts of weariness at home and in the workplace. Moreover, the support of coworkers could be a powerful motivator for already busy professionals in their personal lives. This development makes JD-R theory more difficult, but it remains a good one for explaining and intervening with OHWB in challenging working environments where they occur.

The JD-R Model, PD-R Model, HD-R Model, and OD-R Model all focus on understanding the interaction between demands and resources across various contexts. Each model focuses on how these dynamics influence well-being, performance, and stress, but they differ in scope, focus, and applications.

Table 1: Core idea, applications, the scope of each demand, and resource

Model	Scope	Demands	Resources	Core Idea	Applications
JD-R	Workplace	Workload and time pressure are examples of job demands. Workload and time pressure are examples of job demands	Job resources such as feedback, autonomy, and support	Job resources improve engagement and avoid burnout by reducing the negative consequences of job expectations	Organizational environments for improving engagement, decreasing burnout, and designing jobs
PD-R	Individual	Individual requirements, such as cognitive load and emotional control	Individual assets such as social support, self-efficacy, and resilience	Personal resources enhance general well-being by mitigating the effects of both internal and external stress	Building resilience, managing stress, mental health, and personal growth
HD-R	Home Environment	Demands at home, such as care and housework	Resources at home, such as emotional ties, flexibility, and family support	Home resources improve well-being and work-life balance by mitigating the effects of domestic obligations	Workplace policies that support families and interventions for work-life balance

Model	Scope	Demands	Resources	Core Idea	Applications
OD-R	Organizational	Organizational requirements such as legislation, competition, and financial strains	Infrastructure, culture, and leadership are examples of organizational resources	By reducing the burden of demands, organizational resources promote long-term viability and success	Enhancing organizational resilience, organizational development, and strategic management

Source: Developed by the authors based on established demand-resource models

3. CONTROL VARIABLE

3.1. Control Variables for Job Domain

Personality and Individual Differences (Bal & Kooij, 2011; Bansal et al., 2020; Ghorbannejad & Esakhani, 2016; Liu et al., 2023; Prieto-Díez et al., 2022):

1. Personality traits (such as neuroticism and conscientiousness): Conscientious workers are a resource since they are often well-organised, accountable, and skilled at handling the demands of their jobs. Conversely, neuroticism can heighten the sense of expectations at work, rendering people more vulnerable to stress and burnout.
2. Work-Related Attitudes (e.g., Work Centrality, Job Satisfaction): Employees who view work as central to their identity (high work centrality) may experience greater demands because of the high emotional investment in their jobs. However, if they are satisfied with their job, they may perceive fewer demands and find resources such as meaning and fulfilment in their work. Job satisfaction acts as a resource that promotes well-being and motivation.

3.2. Control Variables for Personal Domain

Personal Characteristics (Al-Hamdan & Bani Issa, 2022; Bielak et al., 2012; Burić et al., 2022; Chen et al., 2020; George et al., 2022; Shao et al., 2022):

1. Personality Traits (e.g., Conscientiousness, Emotional Stability): Personality traits shape how individuals respond to demands. For example, conscientious individuals may better manage time and responsibilities (a resource), while emotional stability helps individuals handle stress effectively. On the other hand, low emotional stability can increase demands by increasing emotional strain.
2. Emotional Intelligence: People who possess high emotional intelligence are more adept at identifying and controlling their own feelings as well as comprehending those of others. This skill improves coping strategies and interpersonal connections during difficult times.
3. Cognitive Ability: The ability to solve problems, reason, and comprehend complicated information is referred to as cognitive ability. Higher cognitive ability is a resource for managing demanding tasks, making individuals more efficient and better able to adapt to challenges.
4. Self-Efficacy: A crucial psychological tool is self-efficacy, which is the conviction that one can succeed in particular circumstances. People who have high self-efficacy typically face obstacles head-on with courage and fortitude. Low self-efficacy, however, can increase demands, as individuals may feel overwhelmed by obstacles.

5. **Physical Health:** Physical health is an essential resource for handling both physical and mental demands. Poor health can become a significant demand, limiting energy, focus, and overall productivity.

Situational Variables (Björk-Fant et al., 2023; Jolly et al., 2021):

1. **Social Support from Family, Friends, or Coworkers:** Social support is a critical resource that provides emotional, practical, and informational help during times of need. Strong social networks can buffer against stress and help individuals cope with demands. A lack of social support might make someone feel more stressed and alone, placing additional demands on them.

2. **Life Events (e.g., Major Life Changes, Trauma):** Significant life events such as marriage, relocation, job loss, or trauma can introduce significant demands into a person's life. These events often require adaptation and coping strategies, which can sometimes reduce access to resources. Conversely, positive life events (e.g., achieving a personal goal) can act as resources by boosting emotional well-being and confidence.

3. **Work-Life Balance:** Effective work-life balance is a resource that helps individuals manage personal and professional responsibilities. A balanced life reduces stress and increases well-being. Work-life balance is the balance between long-term employee and organizational interests (Monje-Amor, 2024). Conversely, poor work-life balance can create significant demands, leading to burnout, stress, and reduced life satisfaction.

3.3. Control Variables for Home Domain

Social and Environmental Factors (Afrahi et al., 2022; Gaxiola Romero et al., 2022; Gu & Xue, 2022; Lyu & Fan, 2022; Ojo et al., 2021; Parida et al., 2023; Wood et al., 2023):

1. **Social Support from Family Members or Community:** Emotional, informational, or practical help from family members or the community can act as a key resource in managing household demands. It reduces stress and promotes well-being.

2. **Family Cohesion and Conflict:** Family cohesion (closeness and unity) is a resource that fosters emotional support and a positive home environment. Conversely, family conflict can be a demand that leads to stress and reduces psychological resources.

3. **Home-Life Satisfaction:** Satisfaction with one's home environment, relationships, and overall living situation is a psychological resource that can enhance well-being and buffer against stress.

4. **Life Events (e.g., Illness or Bereavement):** Major life events like illness or bereavement can create significant demands, disrupting the emotional and social equilibrium of a household and potentially reducing the available resources for coping.

3.4. Control Variables for Organizational Domain

Leadership and Management Factors (Engida et al., 2022; Ghavifekr & Adewale, 2019; Hossan, 2021b, 2021a; Hossan et al., 2021; Ngotngamwong, 2014):

1. **Leadership Style (e.g., Transformational vs. Transactional):** Transformational leadership tends to offer resources in the form of inspiration and developmental opportunities but may also set high expectations (demands). Transactional leadership focuses on structure and rewards but may limit personal growth resources.

2. Leadership Change Frequency: Frequent leadership changes can be a demand, causing instability and disrupting established workflows, but they might also introduce new perspectives and opportunities (resources).

Workplace Structure and Practices

1. Teamwork and Collaboration Level: A high level of teamwork can act as a resource by providing peer support, shared knowledge, and collective problem-solving. However, poor collaboration can increase demands, leading to conflict or inefficiency.

2. HR Policies and Flexibility (e.g., Telework, Flexible Hours): Flexible policies offer resources like work-life balance, autonomy, and reduced stress. Rigid policies can increase demands, making it difficult for employees to manage personal and professional obligations.

3. Organizational Change Initiatives: Change initiatives often come with demands (e.g., adapting to new systems or processes), but successful change can lead to greater organizational resources, such as improved technology or streamlined operations.

4. Diversity and Inclusion Policies: Effective diversity and inclusion policies are resources that foster a sense of belonging, equity, and innovation. Lack of such policies or poor implementation can increase demands by creating conflict or exclusion.

3.5. General Control Variables Across Models

Demographic Variables of the respondents:

Age, Gender, Educational level, Marital status, Number of dependents (family responsibilities), Tenure (years of experience), Employment Status (Full-time vs. Part-time), Job Position (Managerial vs. Non-Managerial), Household income (Bernerth et al., 2018; Yao et al., 2022).

Organizational Demographics:

Organization size (e.g., small, medium, large), Type of industry or sector, Organizational culture and climate, and Geographic location (urban vs. rural) (Bernerth & Aguinis, 2016).

Temporal factors:

Needs-supply (retrospect, current, and anticipated) fit, Demands-abilities (current and anticipated) fit (Hernandez & Guarana, 2018).

4. DISCUSSION

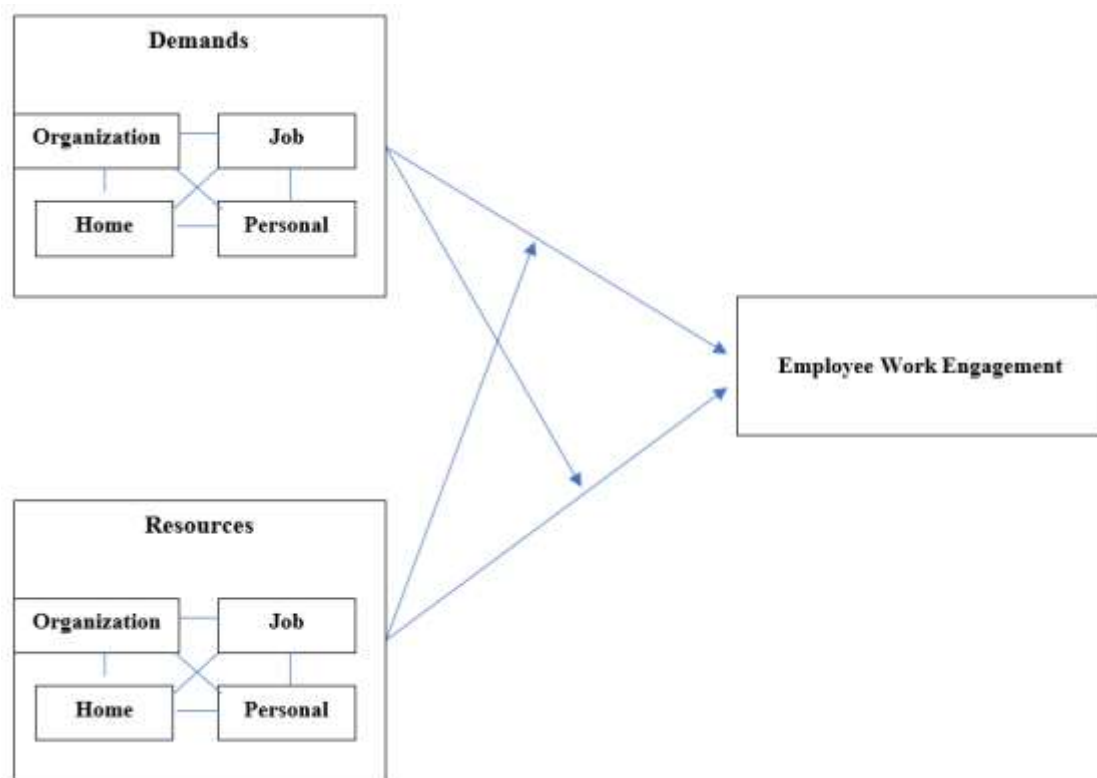
According to the Job Demands-Resources (JD-R) model, work engagement is possible when job demands are high yet manageable and when there are sufficient resources in the workplace. These working environments are likely to sustain employee motivation and well-being, helping them perform their duties efficiently. When employees lack the necessary resources to do their jobs well during a crisis, or when their job expectations are unrealistic, they are likely to feel more exhausted and less motivated. Mazzetti and his team (2025) found that job demands significantly affect employee well-being, especially in challenging work conditions.

Employees may struggle to make constructive contributions due to low energy or health issues, or they may not be engaged enough to have a positive impact on key organizational performance measures, such as quality of service and productivity. Nevertheless, since the crisis is literally affecting them, it's crucial to establish or maintain an optimal balance of

work elements like job demands and resources. In the context of a crisis, knowing how resources are currently being allocated is vital for making successful reallocation decisions, especially when resources are finite (Mishra, 1996). Busing's (1999) work demonstrated that the insecurity of a job had absolutely no effect on satisfaction with the job if one enjoyed a great deal of power and social support during times when an economy was in decline. Wu et al. (2025) found that human-technology collaboration positively impacted work engagement, but only if the basic needs of quality of work life were met.

Proposition 1: Employees facing manageable job demands and possessing high job resources (and employees with high job demands and low job resources) are more adept at adapting to circumstances and sustaining an appropriate degree of work engagement, due to the consistency of Control Variables within the job domain.

Figure 1. Proposed model for sustainable employee work engagement



Source: Adapted from the extended JD-R theory proposed by Demerouti and Bakker (2023)

JD-R theory was originally focused only on job demands and resources (except for Demerouti et al.). (2004), who extended its use to the home environment. The majority of stress theories, such as the work strain theory (Karasek & Theorell, 1990), take a one-job-at-a-time approach. Members of staff may take on multiple roles, showing a lack of understanding that the experience of stress is complex (Barnett et al., 2012).

Kreiner (2012, page 417) writes that organizational processes take place within broader ecological contexts where subsequent interactions are replete with serendipity and the unexpected. Turner and Lingard (2016) claim that one's aspirations are related to each other and cannot be seen separately. Research practices indicate that people who have many job

demands miss work more than those with few. Van Woerkom et al. (2016) state that a range of varied work demands amplified reported absentee levels across the organisation. The authors used the conservation of resources hypothesis (COR; Hobfoll et al., 2018) to help explain this effect. They proposed that markets would deplete resources in one domain of work due to high demands and, because the same resource may be needed to meet other needs, a loss cycle would ensue. Given that role theories posit the effects of workplace expectations are contingent on the level of more salient family role demands (Hollenbeck et al., 1989; Hughes & Galinsky, 1994; Pleck, 1977), limited research has examined the work-nonwork interface.

As time and energy are finite, the complex relationship of work (job and organizational) and nonwork (family and personal) role characteristics may better explain how individuals handle stress (see Figure 1). Moreover, most people cannot attend to only one role at a time. Employees have to deal with multiple work and non-work demands simultaneously, and the need to simultaneously cope with great external demands will probably impact how they react to job demands. Pleck's (1977) work-family role type schema suggests that people's job demands are structured at the family level rather than the individual level. Barnett et al. (2012) propose, however, that alternative resources from other roles can be used when the requirements of a specific role threaten to reduce a particular resource. This tactic could lead to a reduction in material across all segments, regardless of space. Individuals transfer resources from their personal and/or family life to meet job demands, attempting to avoid depleting these same resources.

Hughes and Galinsky (1994) found that job-related variables, such as job pressure, long work hours, and job insecurity were moderators of the effect of family role stressors; a child under thirteen years of age in the home, household inequality of labor division between partners and dual-earner status on their home outcomes in terms of mood states, tension/relaxation levels and mutual support. High structural requirements at work don't leave workers enough slack to tolerate their spouse's failure to help with housework, causing problems in the marriage. This reasoning might also apply when people have high self-imposed standards, like perfectionism, and their work demands are more exacting, or when employers exert greater pressure on their employees.

Proposition 2: Given that the Control Variables from job, personal, work, and home domains remain constant, organizational, job, home, and personal demands interact in a manner wherein the impact of any single demand (e.g., job demands) on work engagement is intensified when other demands (e.g., home demands) are elevated.

The interaction of resources across multiple life domains could explain their motivational effects. In contrast, the interplay of demands across multiple life domains should provide insight into how these demands have negative consequences for outcomes. The COR (Hobfoll, 1989; Hobfoll et al., 2018) posits that individuals seek to obtain, protect, and preserve personal characteristics, conditions, and goods that enable them to cope with work challenges. If people don't meet the high demands of their job, they may be stressed or tired because they're running low on resources. According to this view, people are likely to use a variety of 'instruments' to protect their biological and mental health, adding to what Hobfoll (2002) has described as their "stress resistance armamentarium" (p. 312). Resources (i.e., time, physical and mental energy) are finite (Ten Brummelhuis & Bakker, 2012). If these resources are used to address one potential job demand, then people might have less left for other demands (Van Woerkom et al., 2016).

According to Ross and Mirowsky (2010), receiving resources from other domains could have at least two distinct implications for the degree to which these resources satisfy needs. The

initial scenario illustrates what Ross and Mirowsky refer to as “reinforcement of advantage” or “resource multiplication,” wherein “advantaged groups gain most from the resources they have, so that their resources multiply to reinforce their advantage” (p. 2–3). The second example demonstrates the hypothesis of substitution of resources, which assumes that the buffering effect of job resources is more pronounced for those with no other resources, in this case personal resources. Ross & Mirowsky, 2010) and observe that “either has a weaker effect when the other is present” and “the effect of possessing any given resource is larger for those who have fewer alternative resources” (p. 7). To maintain balance between requests, resources can be swapped.

Simultaneously possessing multiple resources, such as increased job autonomy and higher education, reduces the dependence of outcomes on any single resource. According to the reinforcement hypothesis, family support enhanced the positive impact of work-family enrichment and family-work enrichment on well-being (Kalliath et al., 2019). The influence of organisational health climate on work engagement was more pronounced when leaders exhibited a pronounced health mindset towards employees (Shin & Hur, 2021a, 2021b). Koltai and Schieman (2015) found that, consistent with the substitution hypothesis, the influence of autonomy or challenging work diminished for individuals with a higher level of personal resource of socioeconomic status (SES). Theoretical approaches and empirical evidence indicate that examining the interplay of various resources in predicting motivational outcomes, especially for individuals in need during crises, is crucial (Ross & Mirowsky, 2010). Given the ambiguity surrounding the substitutability of resources in influencing motivational outcomes, it is essential for future research to identify which specific resources can serve as substitutes. This introduces the subsequent proposition in JD-R theory.

Proposition 3: Given that the Control Variables from job, personal, work, and home domains remain constant, organizational, job, home, and personal resources interact in a manner where the impact of any single resource (e.g., job resources) on work engagement is intensified when other resources (e.g., home resources) are abundant (i.e., resource reinforcement), or is diminished in the presence of alternative resources (i.e., resource substitution).

Demands and resources from various life domains likely interact in complex manners, potentially altering the nature and/or impact of other demands or resources (Bakker et al., 2019; Du et al., 2018; Turner & Lingard, 2016). According to ecological systems theory, individuals operate within several interconnected environments or systems that influence them (Bronfenbrenner, 1989). Cross-domain processes include resource drain, resource gain, and positive or negative spillover (Edwards & Rothbard, 2000; Ten Brummelhuis & Bakker, 2012).

Voydanoff (2005) posited that individuals evaluate the adequacy of work and family resources to fulfil the demands of both domains, ensuring effective participation in each. Individuals weigh whether their family resources are sufficient to meet job demands and whether their work resources are adequate to meet their families' needs. As a result, to achieve balance, coherence, and integration between professional and family lifestyles, they use boundary-spanning mechanisms (see Fig. 1). When the demands of one job threaten to deplete a particular resource, resources from other occupations can be accessed (Barnett et al., 2012). When work caregivers have a heavy workload, they may use organizational resources (e.g., vacation time) or family resources (e.g., time with family members) to avoid returning home feeling more fatigued (Barnett et al., 2012).

This viewpoint aligns with a fundamental tenet of COR (Conservation of Resources) theory, which posits that individuals possessing greater resources experience reduced negative

impacts during resource depletion, as they are able to substitute these resources effectively. This phenomenon may arise as resources in one domain can enhance employees' ability to achieve goals in another domain through increased personal resources or energies (Ten Brummelhuis & Bakker, 2012). Resources from one domain can generate new resources in another domain, thereby enhancing participation in the latter or increasing the competence and capacities of individuals to perform in different domains (Voydanoff, 2005). Furthermore, resources within a single domain can facilitate an individual's ability to handle various demands across multiple domains. For instance, practical support from a partner allows individuals to engage in extended work hours and overtime (Turner & Lingard, 2016).

The evidence concerning the buffering effects of cross-domain resources is inconsistent. Luk and Shaffer (2005) found that home support, a form of home resource, reduced the impact of work role expectations on work-life conflict, while organizational family-friendly policies, an organizational resource, attenuated the relationship between commitment to work time and work-life conflict. Li et al. (2025) theorized that levels of employees' organizational commitment are directly connected with job control as well as social connectedness. Butler et al. (2009) could not confirm the buffering effect of spousal support on the relation between daily job demands and work-family conflict. However, Luk and Shaffer (2005) found that supervisor support and family-friendly policies may strengthen rather than reduce the effect of family role expectations on family-work conflict. This result was interpreted as an attempt to reciprocate to the domain that provided the resource. According to Festinger's (1957) cognitive dissonance theory, receiving help from another sector of society may not actually reduce stress but could generate a subconscious need to pay it forward. Despite being in a supportive organization or working under supportive leadership, employees may feel more compelled to excel beyond the expected level to meet their employers' and superiors' expectations. We therefore suggest two classes of moderating effects in our further hypotheses, thus extending JD-R theory. We offer the buffering hypothesis, which suggests that cross-domain and within-domain buffering processes – by which resources at work buffer job demands against health outcomes. Job-related resources, in particular, may mitigate the effect of household tasks on health outcomes.

The literature review also reveals that resources may weaken in a way that worsens health degradation if persons focus on the domain that provided them, rather than directly investing their attention in the second domain rather than the first. Further research may clarify whether this is an effect of domain-specific resources, such as support from specific domains (e.g., family support), or in response to demands imposed by diagnosed domains.

Proposition 4: Given that the Control Variables from job, personal, work, and home domains remain constant, resources from any domain (i.e., organization, job, home, or personal) can either amplify or mitigate the impact of demands from the same or different domains on work engagement.

According to the JD-R theory (Breevaart & Bakker, 2018; Tadic et al., 2015), hard work may enhance the functioning of job resources. This suggests that people are more likely to behave according to resource motives when they face adversity. This concept is consistent with Hobfoll (2002), who argued that resources are most beneficial when needed the most (e.g., when work demands are high due to a crisis). Resource gain is clearly evident against a backdrop of resource loss. Consistent with the more specific boosting hypothesis embedded in JD-R theory, work demands enhance learning and intrinsic motivation (Schneider et al., 2017) or the use of job resources (van den Broeck et al., 2011), thus indirectly illustrating how job resources potentially have (positive) effects on outcomes.

Several studies have examined the moderating effect of job demands on the relationship between resources and work engagement (e.g., Bakker et al., 2007; Breevaart & Bakker, 2018; Hakanen et al., 2005; Tadic et al., 2015; van den Broeck et al., 2011). Comparable boosting effects have been observed between resources and demands across various domains. Hughes and Galinsky (1994) found that the presence of a child under 13 years of age moderated the relationship between job flexibility and marital quality. The relationship between job flexibility, considered a job resource, and marital support was found to be positive exclusively among employees with children under the age of 13, identified as a home demand. The relationship between job flexibility and marital support was not significant for employees with children over the age of 13. Consequently, as illustrated in Figure 1, the JD-R theory is expanded and suggested.

Proposition 5: Given that the Control Variables from job, personal, organization, and home domains remain constant, demands from any domain (i.e., organization, job, home, personal) can amplify the affirmative effect of job resources on work engagement.

5. FROM THEORY TO EVIDENCE AND PRACTICE: FUTURE DIRECTIONS FOR EMPIRICAL VALIDATION

Future studies may employ both quantitative and qualitative approaches to test the interaction effects of demands, resources, and control variables across job, personal, organization, and home domains.

First, Proposition 1 may be examined using moderated regression, structural equation modeling (SEM), or latent interaction modeling to assess how jointly manageable job demands and high job resources predict work engagement, while accounting for control variables. Experience sampling or diary studies could also capture short-term fluctuations in demands, resources, and engagement.

Second, Propositions 2 and 3, which highlight cross-domain interactions among demands and resources, may be tested through multilevel modeling (MLM), recognizing that individuals operate within nested contexts (e.g., employees within teams, families, or departments). Researchers may also use person-centered techniques, such as latent profile analysis, to identify demand–resource configurations across domains.

Third, Propositions 4 and 5 highlight how demands and resources across different domains interact to influence work engagement. Future research could use cross-lagged panel designs to examine these dynamic, reciprocal relationships over time, showing how resources may buffer or amplify demands and how demands may enhance the effect of resources across life domains.

Finally, future studies could apply the model in diverse organizational settings, such as manufacturing, services, education, or healthcare, to determine whether the interactions among demands, resources, and control variables operate similarly across industries and cultural contexts. Comparative studies may reveal boundary conditions or contextual differences that shape work engagement.

CONCLUSION AND RECOMMENDATION FOR CONTROL VARIABLES IN FUTURE STUDIES

The need for control variables is best described by an abundance of information. This requires describing how the study and control variables are connected, especially when there is a cause-and-effect relationship or just an association. Authors should also define the

relationship among these elements. We also recommend that when it makes sense, significant effect relationships found in meta-analyses should be adjusted for control variables. In the absence of meta-analytic information, authors need to specify the types of associations and findings reported in previous research (e.g., correlations or results from longitudinal studies).

In the absence of such previous empirical research to support the inclusion of control variables, researchers should move beyond purely logical reasoning when investigating a posited relationship and instead rely on theoretical frameworks to demonstrate why a particular control variable is needed. There's a good reason a problem occurs when mixing control variables with suppressor or moderator variables are problematic. Where theoretical models or earlier empirical evidence suggest a stable direction of relationships, it is expected by researchers that the form that control and dependent-variable relations will take. This encourages authors to think through control variables more carefully and increases the likelihood that they will provide a strong justification for their inclusion. Authors must provide a demonstration of the results of the association between the independent and dependent variables in both the text of the paper and in tables.

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THE ESSENCE OF AGILE TALENT THROUGH BUSINESS AND ACADEMIC PERSPECTIVE

ABSTRACT

The current article is composed to explore the essence and emerging shades in the meaning of the modern construct of agile talent. **Methodology** – Systematic Literature review, critical analysis, and content analysis of selected publications, including scientific articles, conference papers, reports, and corporate websites, are applied as research methods in concern with achieving the aforementioned research purpose. Identified the important nuances and basic characteristics of agile talent are summarized and categorized through the mind-map method. **Findings** – An existing set of related nuances in the meaning of agile talent is described that served as a prerequisite to deliberate proposal of a useful definition for the aforementioned construct. Directions for future research in the sphere of agile talent are also outlined. **Research limitations** – The research on agile talent is conducted in Google search engine, embedding the business perspective pursuit, and the scientific aggregator of Google Scholar, incarnating the following scientific perspective.

KEYWORDS: agile talent, talent, agile, agile organizations, talent agility.

JEL: M12, J24, M50

INTRODUCTION

Post Covid-19 world, geopolitical tensions, local war conflicts, terrorism, technological and other disruptions, climate change, and green transition embody the sources of great challenges to the survival and potentially successful development of contemporary companies. Observed numerous “trials and errors” in interpreting the business environment signals prove to be a difficult or sometimes even unsurmountable individual or collective endeavor for managers, employees and other constituencies of business organizations whose beliefs about realizing the organizational issues of external adaptation, internal integration, the nature of the truth, time, space, human nature, appropriate human activity, and nature of human relationship (Schein & Schein, 2017) seem to be extremely diverse. Furthermore, a wide array of adopted attitudes and behaviors by managers and other stakeholders to continuous coping with these revolving organizational issues is also noticed, reflecting their assumptions about forming priorities in business (i.e. formulating and appraising the pursuits of unique purpose and related objectives), ways of addressing change, attracting and using of specific resources, approaches in identifying and taking advantage of business opportunities due to the achievement of inconsistent (unpredictable) business outcomes, and resulting hesitation, perceived anxiety and uncertainty in relation with the undertaken interventions (table 1).

Table 1. Differentiated approaches in “reading” the business environment factors

Differentiated approaches in identifying, understanding, and interpreting of important factors in the contemporary business environment	Adopted attitudes and behaviors by managers and other stakeholders to corporate management & development
Mack, K., Krämer & Burgartz (2015); Bennett & Lemoine (2014) – “volatility, uncertainties, complexity, and ambiguity.”	Stănescu & Romaşcanu (2022); Sreenivasan (2019) – “vision, understanding, courage and adaptability.”
Nataliia & Olena (2023); Cascio (2020) – “brittle, anxious, non-linear and incomprehensible.”	Stănescu & Romaşcanu (2022); Sreenivasan (2019) – “equitability, inclusiveness & diversity of the business world, vibrancy, unparalleled work output, challenging work, agility.”
Leading Effectively Staff (2019) – “rapid, unpredictable, paradoxical, and tangled.”	Stănescu & Romaşcanu (2022); Balita (2020) – “positive outlook amid the Covid-19 crisis, virtuous values, utilitarian unity, circumspective clarity and agile action.”
Kohler (2021) – “turbulent, uncertain, novel, and ambiguous.”	Falkenberg (2019) – “reality, understanding, possibilities, and transparency.”

Source: Own research and analysis.

The already described complicated situation brings to the forefront the issues with navigating effectively and efficiently through management and leadership challenges of purposeful attracting and/or creating of high value-adding people in contemporary business organizations as their main source of sustainable competitive advantage, even in the era of wide penetrating artificial intelligence, robotics, virtual and augmented reality, automation, digital technologies, wearables and blockchain (Priya & Jayalakshmi, 2025; Parry & Battista, 2023; Jassy, 2025; Gowrishankkar et al., 2025), driving continuous organizational renewal (Raofian, Ghatari, Manesh & Palumbo, 2025; Flinn, 2024; Lowry, 2024) and under the conditions of dominating unhealthy pluralism in the practical use of diverse, incongruent and in some aspects even colliding people related theories and practices as (green) human resource management, human-centered management, human capital management, personnel management, people management, exponential human resource management and talent management (Hamid, 2019; Dimitrov, K. R., 2021; Lepeley, 2023; Hanine & Dinar, 2022; Popova & Shynkarenko, 2016; Zhang-Zhang, Rohlfers & Varma, 2022; Diamandis & Kotler, 2015; Ismail, Malone, van Geest & Diamandis, 2014; Younger & Smallwood, 2016a; Dimitrov, 2023, 2019; Venkatesh, 2016).

That is why surveying the essence and significant characteristics of an emerging construct of “agile talent” is chosen as the subject of this article. Secondary sources are selected as an object of survey, i.e., scientific articles, conference papers, reports, and corporate websites, not only discoverable through search by the aforementioned keyword in Google search engine (***, 2025a), but also in the scientific aggregator of Google Scholar (***, 2025b). The necessary discipline in thinking and acting for this research endeavor is provided by the semantical support of two useful definitions, implying the necessity of a new people-oriented approach to be designed and implemented in agile business organizations, as follows:

- *Talent* - that “refers to systematically developed innate abilities of individuals that are deployed in activities they like, find important, and in which they want to invest energy. It enables individuals to perform excellently in one or more domains of human functioning, operationalized as performing better than other individuals of the same age or experience, or as performing consistently at their personal best” (Nijs, Gallardo-Gallardo, Dries, & Sels, 2014), without even implying the idea to question the organizational need of its management (i.e. talent management) (Dimitrov, 2015).

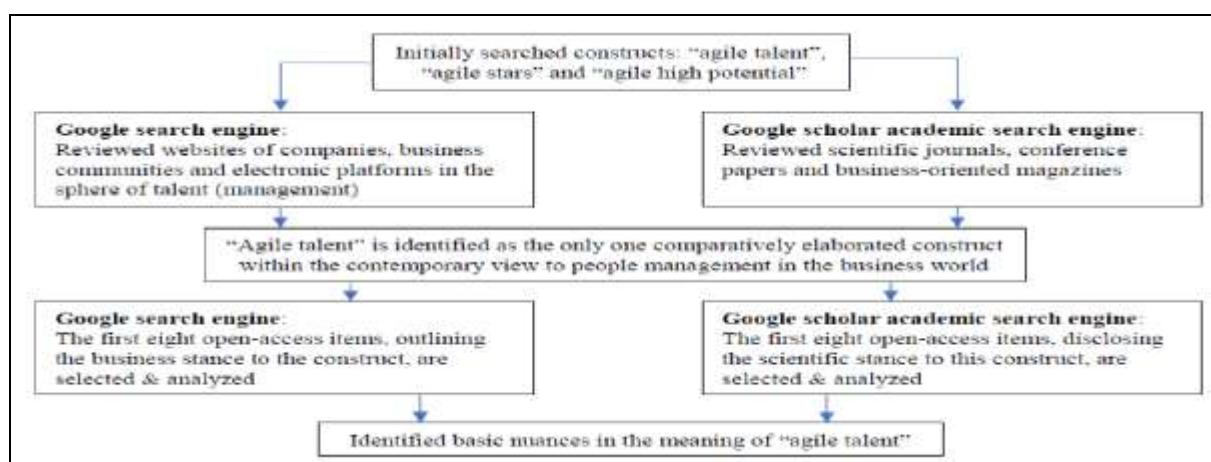
- *An agile organization* – “a network of teams operating in rapid learning and decision-making cycles”, substantially supported by technology and “guided by a common purpose that co-creates value for all stakeholders by utilizing new data and empowering the teams closest to the information”. Fast and efficient reconfigurations of “strategy, structure, processes, people, and technology toward value-creating and value-protecting opportunities” permit the agile entity adding “velocity and adaptability to stability, creating a critical source of competitive advantage in volatile, uncertain, complex, and ambiguous conditions” (Brosseau, Ebrahim, Handscomb & Thaker, 2019; The McKinsey Agile Tribe, 2017).

1. METHODOLOGY

The arising construct of “agile talent” is explored here by outlining an accumulating array of nuances in its meaning. This is accomplished by the use of systematic literature review, content analysis and critical analysis (see Snyder, 2023; Paul, Khatri & Kaur Duggal, 2023; van Wee & Banister, 2023; Moher, Liberati, Tetzlaff, Altman & The PRISMA Group, 2009) for a group of publications, found in Google search engine (***, 2025a), Google scholar academic search engine (***, 2025b) where the existence of some iterations to “agile talent” are also observed, as close constructs as “agile stars” and “agile high potentials”. This research task is based simultaneously on open-access publications, written in the English language, outlining both the business stance (e.g., websites of companies, business communities, and electronic platforms in the sphere of talent management) and the scientific stance (e.g., scientific journals, conference papers, and business-oriented magazines). The first eight appropriate, full-text items from each category are chosen for content and critical analysis. This is how: (a) key nuances in the bundle of the forming meaning for “agile talent” are identified; (b) five reasons, explaining the instability of its meaning, are indicated, and (c) a useful definition for the aforementioned construct is deliberately proposed, extending the potential and diverse categories of people and creatively reframed constituencies that may contribute to the success of a target company.

Finally, important shades of meaning of agile talent are reviewed and summarized by generating a useful mind-map (Buzan, 2018). The consecutive steps in selecting the group of items from the aforementioned search engines and academic databases are shown in Figure 1.

Figure 1: The selection steps in exploring the construct of agile talent



Source: Own research and analysis.

This paper also abides by two research limitations. *First*, the research for the construct of agile talent is held only in the Google search engine, pursuing the business perspective, and the scientific aggregator of Google Scholar, following the scientific perspective.

Second, the use of already mentioned constructs as “agile stars” and “agile high potentials, and even the new ones, identified during the conducted research process, is avoided, i.e. “workforce agility”, “agile workforce”, “employee agility”, “human resource agility”, “HR agility”, “people agility” and “talent agility” (Gouda & Tiwari, 2022), due their possible attribution to diverse people management theories (schools of thought), unclear and ambiguous relationships with agile talent and rare applications that may provoke some underlying analytical contradictions and confusion among unbiased researchers.

2. THE CONSTRUCT OF “AGILE TALENT” IN THE PROCESS OF BECOMING

It is an indisputable truth that management as a science possesses two main sources of accumulating new knowledge – the experience of decision-makers in performing business organizations and the proposed new scientific instruments, resulting from academic research. This is the reason why the shades of meaning, embedded in the emerging construct of “agile talent”, are identified and analysed here through the lens of both the first eight companies, providing a useful definition or succinct description for it on their websites in Google search engine (***, 2025a) and the first eight open-access articles from Google scholar academic aggregator (***, 2025b), providing similar contribution. Three milestones initially directed and further concentrated the conducted research process to the exploration of the construct of agile talent, as follows:

- The grounded position of Vardi and Collings (2023) who perform a research review of scientific literature on management of talent in modern business organizations that undoubtedly shows the existing unity and complementarity of three traditionally close constructs as (1) “talent”, (2) “stars” and (3) “high potential”, respectively corresponding to the three approaches of the wider defined “people management”, implemented in contemporary companies – i.e. (1) as the object of talent management, originating from the broader stream of strategic (important, long-term) human resource management, (2) through the lens of human capital, and (3) from the perspective of organizational behavior and psychology. An initial research is conducted on the potentially existing two variations of the target construct of “agile talent” – “agile stars” and “agile high potential” through Google search engine (***, 2025a) and in Google Scholar aggregator (***, 2025b), revealing that “agile talent” is the only comparatively elaborated construct within the contemporary view to managing people in the business world in comparison to the already mentioned two close constructs that justifies its choice as a research subject.
- The in-depth search in Google Scholar for “agile talent” that discloses widespread joint and arbitrary applications, many times even without providing of necessary, respective definitions for used and a bit impulsively adopted as potentially close terms, i.e. “workforce agility”, “agile workforce”, “employee agility”, “human resource agility”, “HR agility” and “people agility” (Gouda & Tiwari, 2022).
- The in-depth search in Google Scholar for the exact construct of “agile talent” that also revealed a rare use of another closer construct, labelled as “talent agility”, appearing in headings, abstracts, and full-text of reviewed items (Gouda & Tiwari, 2024a; 2024b; 2022). The last construct still seems bewildering because of not only observed interchangeable use without any scientific explanations, but also lack of

scientific agreement around prescribed meanings to it, regarding its relationship with the core construct of “agile talent” – for example viewing it as an organizational capability, a workforce ability or characteristic, internal/ external orientation of undertaken activities, and positioning it as a main organizational development aim versus a means of achieving it (Gouda & Tiwari, 2024a; 2024b; 2022; IMocha, 2025; Younger & Smallwood, 2016a). Furthermore, the first book in the field of agile talent (Younger & Smallwood, 2016a) discloses a predominant utilization of agile talent and rare application of talent agility in its text body, unlike in the papers by Gouda & Tiwari (2024a; 2024b; 2022), where the opposite situation is noticed. In both provided opposing cases, the use of the aforementioned two constructs seems arbitrary and undisciplined, without outlining any similarities or differences between them.

Thus, the performed research for agile talent in Google search engine (***, 2025a) and Google scholar academic aggregator (***, 2025b) discloses: (a) a grounded business stance to outlining key nuances in the meaning of “agile talent” (table 2), based on relevant content of corporate websites, business communities and electronic platforms, and (b) an emerging scientific approach to identifying important shades in the meaning of “agile talent”, based on publications in scientific books, journals and business-oriented magazines (table 3).

Table 2: The business stance in outlining important nuances in the meaning of “agile talent”

Company/ Community	Provided a definition or description of agile talent
Agile Talent Community - Grant Thornton (***, 2025c)	(1) Agile, open, and collaborative (2) Contract professionals, contributing project-based work to the company and/or to its clients (3) Contract professionals, inculcated with unique organizational culture attributes. (4) Contract professionals in a long-term relationship with a target company. (5) Talent, brought together “from across our industry and beyond.”
Agile Talent – a functional practice group in Cornerstone (***, 2025d)	“A highly adaptable workforce capable of enabling companies to achieve the objectives of tomorrow.”
Hemsley Fraser (***, 2025e)	(1) Strong believers in “continuous learning, improvement, innovation.” (2) Actively challenging “the status quo by pursuing more value.” (3) Openness to “new and different ways of doing things, skills and capabilities.” (4) Desire to collaborate and stretch across boundaries.
Bain & Company (Johnson, Jacobs, Thompson, Gunn & Woods, 2023)	(1) Performing “work with a clear sense of purpose.” (2) Expecting from managers and peers “encouragement and freedom to innovate.” (3) Belonging to a community of professionals, understanding and embracing “Agile” as a sphere of knowledge, and doing things in teams and companies (4) Characterized by multisourcing – simultaneously being grown as top talent from inside and being attracted from outside the business organization (5) Trusting performance reviews that emphasize more team-based work and collaborative success in comparison to individual skills (6) Preferring compensation and rewards, based on team incentives, with widened salary bands to close the gap between agile talent and managerial jobs. (7) Being provided with the opportunity to transfer their Agile skills laterally to other projects or functions in the company.
Osborne Interim Management (Kendall, 2023)	(1) Contract executives, astutely used by target companies (2) Agile (temporary, contract, interim) talent (3) “Gigster” workforce (4) Well-qualified, experienced, senior contract managers
Ioffice by Eptura (McDonald, 2019)	(1) A group of full-time employees, freelancers, contractors, and consultants, i.e., the company personnel (2) A talent pool of a company, used to source candidates not only in its immediate area, but also regionally, nationally, and/or globally
Prowareness (Gieles &	(1) Emphasizing teamwork

Company/ Community	Provided a definition or description of agile talent
van der Meer, 2017)	(2) Implementing predominantly Kanban or Scrumban methods of work (3) Relative ease in (un-)learning and responding to changes (4) High motivation and specific personal characteristics, enhancing transparency, cooperation, and collaboration
Toptal platform (Younger, n.d.)	(1) An enabler of accession to the global talent “cloud” by the company (2) An indispensable part of the “blended workforce.”

Source: Own research and analysis

Table 3: The scientific approach in identifying key shades in the meaning of “agile talent”

Scientific/ Business publication	Provided a definition or description of agile talent
Jriyasetapong, Kiattisin & Ayuthaya (2023)	Narrower apprehension: (a) its strategic perspective; (b) the learners in the business organization; (c) a significant and multicomponent factor in a model, enhancing organizational digital transformation
Forbes (Wingard, 2019)	(1) Freelancers (2) Outside experts (3) A new generation of workers (4) Associated with strategic work
Cappelli, et al. (2018)	Employees collaborate in small, cross-functional units (teams).
WorkingCapitalReview (2018)	(1) Mobile staff (2) Contractors, consultants, freelancers, and other categories of people, performing necessary work for a target company, but not under the traditional “employer-employee” relationship (3) Talents, performing not only administrative, operational-focused, or temporary work tasks, but also delivering strategic and sophisticated ones
Horney (2016)	(1) External, project-based, and flexible, contingent workers, gigsters, free agents, temporary help, agency workers, on-call workers, contract workers, independent contractors, or freelancers (2) A component of the “gig” economy (3) Full-time employees
Younger (2016)	(1) Freelancers (2) An enabler of cost efficiency, necessary specific technical or functional expertise, higher speed, greater flexibility, and innovation for the business organization
Younger & Smallwood (2016a)	(1) An enabler of non-traditional employment relationships (2) It contains not only full-time employees, but also external, project-based, and flexible workforce (i.e., outside experts, external staff, contingent workers, free agents, contractors, and “gigsters”)
Younger & Smallwood (2016b)	external, project-based, flexible, global

Source: Own research and analysis.

Based on the summarized information in the presented two tables, it may be concluded that the “agile talent” construct emerges as:

- An efficient and effective organizational response in the sphere of contemporary people management to the influences of the faster changing, volatile, uncertain, complex, ambiguous and even bewildering business environment – a grounded perspective, supported by other influential researchers not only concentrating their interests within the narrower sphere of agile talent (Barman, Riederer & Salo, 2021), but also looking to the broader and holistic issues of agile talent management, the realizations of important relationships as dynamic talent management capabilities and organizational agility (Harsch & Festing, 2020) or organization agility and talent

management (Lawler III & Worley, 2015) and the specificity of leading under the conditions of the VUCA environment (Lawrence, 2013).

- A logical consequence of the intensive “war for talent” among competing companies in many fast-growing industries all over the world, that brings to even greater and creative widening of the aggregate of personnel categories, identified and deliberately attracted to contribute to the target company, even undertaking deliberate management interventions of transforming the stakeholders into talent categories. Such perspective is also adopted by other leading researchers, opinion leaders and business consultants as Younger & Smallwood (2016a), Sánchez-Bayón & Lominchar (2020), Dimitrov (2019), Ismail, Malone, van Geest & Diamandis (2014), World Employment Confederation (n.d.) and Gigged.AI (2025) whose expressed grounded opinions and research results imply the formation of a consensus, regarding: (a) the inevitable enrichment and restructuring of the monitored stakeholder groups (i.e. arranging and managing the actors in company’s workforce or generally human ecosystem), even elaborating new ones (users, fans, partners, general public, etc.) by design and implementation of information-enabled products and services, and by even co-creating and utilizing the great potential of (agentic) artificial intelligence; (b) widespread, simultaneous implementations of new and diverse types of “employer-employee” relationships, characterized by deliberate choices of employment locations (in or outside the organizational boundaries), preferred types and durations of binding contracts, the utilization of services by intermediaries (e.g. employee leasing companies or practicing even employee sharing within a particular context, freelance platforms, etc.) in the employment process and during the employment periods even in the “grey area” still not well arranged by the enacted labour laws in the majority of national jurisdictions.
- A complex business-related cultural phenomenon, manifesting due to the occurrence of generational change in the workplace, increasing and creative adoption of (management) innovations, information technologies, and project-based work organization of daily activities under the frameworks of designed and implemented new business models. Thus, to the forefront comes the need to adequately elaborate the training and development component of the talent management function, especially with an emphasis on the (un-)learning patterns of humans and groups, and the teamwork as a whole, in or outside the organizational boundaries, in relation to the occurring constant change and its accelerating pace. A strong support to this stance may be inferred through the work results of other researchers in this field who explore the urgent need of broader talent management reinvention, i.e. the embeddedness of agility in separate talent management system elements (Ranasinghe & Sangaradeniya, 2021) and even beyond agility to encompass its manifestations in different cultural levels (Claus, 2019; Dimitrov, 2012).

Nevertheless, the construct of agile talent still seems a bit confusing and unstable, as evidenced by the search on Google (***, 2025a) and Google Scholar (***, 2025b) for at least five reasons. *First*, it does not represent a newness in the sphere of human resource management entirely, because a recommendation to shift the focus in the work of human resource units from inside full-time employees to outside the organizational boundaries was made years earlier (Armstrong, 2012; Ulrich, Younger, Brockbank & Ulrich, 2012; Scullion & Collings, 2010).

Second, there exist articles containing the exact term – sometimes in their headings, but without defining, deeply analyzing, or surveying it in the following sections of theirs (see

Sánchez-Bayón & Lominchar, 2020; Lawrence, 2013; Ranasinghe & Sangaradeniya, 2021; Barman, Riederer & Salo, 2021).

Third, there may be found scientific articles that do not use the exact construct of “agile talent”, although their topic is oriented to outlining the intersection between the elements of talent management and the agile management practices, sometimes labeling it as necessary management innovation (i.e. HR disruption or talent management reinvention) for the purpose of realizing development, growth and sustainability in business organizations (Claus, 2019; De SmetRep, 2018; Mahadevan, Paquette, Rashid & Ustinov, 2019; Martin, 2015).

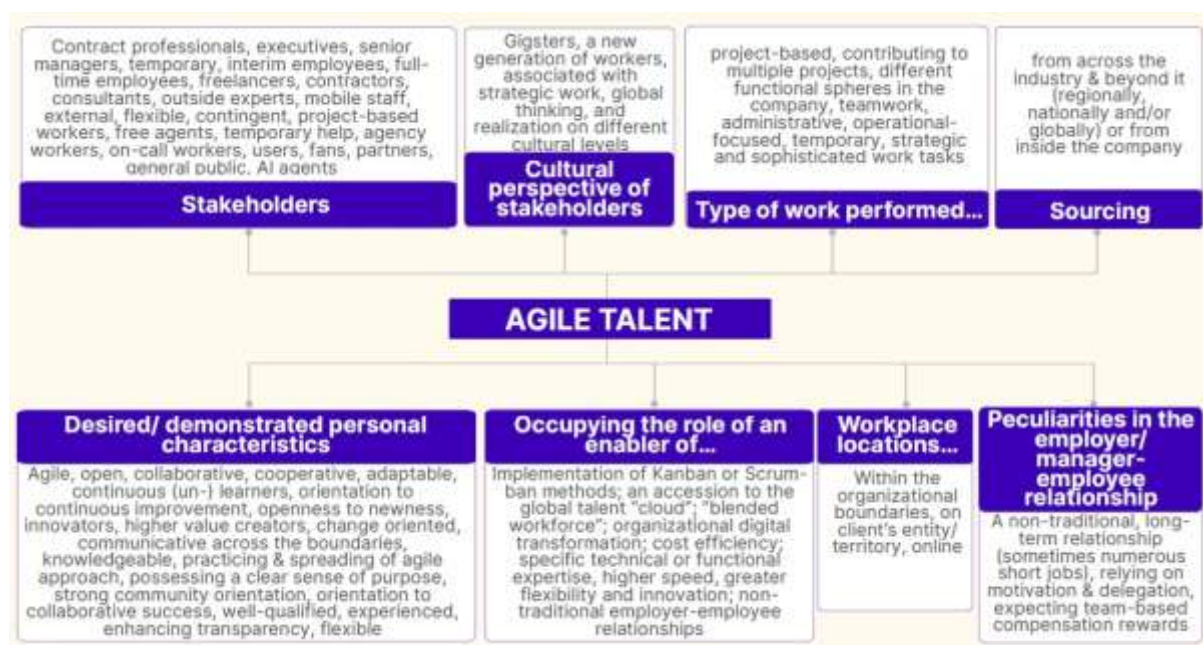
Fourth, Younger and Smallwood (2016a) use in their influential book predominantly the constituency of “outside experts” to denote “agile talent” with the exception that in its introduction, their colleague Marshall Goldsmith deliberately provides further details of diverse personnel groups, covered under the semantic umbrella of agile talent.

Fifth, it seems implied that simply the embracement of talent management in modern business organizations as a prerequisite of increasing personnel preparedness, readiness, and agility brings to demonstrations of restraint from the application of the term “agile talent” (Martin, 2015).

CONCLUSION

The logic summary of the already identified important shades in the meaning of the construct “agile talent” is depicted on a specific mind map (Figure 2), where the contributions of both the identified groups of the first eight open-access scientific or business-oriented publications, containing in their text bodies the exact aforementioned construct, represent the backbone.

Figure 2. The mind map for the agile talent



Source: Own analysis.

In this way, agile talent seems to emerge as a construct which elaborating bundle of shades of meaning driven by participating stakeholders (talent categories), incl. their cultural

perspectives, cherished personal characteristics, type of performed work, sourcing, enabled desired organizational states of being, workplace locations, and observed peculiarities in “employer/ manager – employee” relationship. Thus, the performed holistic analysis contributes to proposing a comprehensive definition of the underlying term – “agile talent” that is adopted *as the efficient and effective use and creative segmentation of company stakeholder (talent) groups (i.e. workforce or generally human ecosystem actors, and even in the virtual environment or the emerging artificial intelligence agents) as full-time managers/employees, external staff/ experts/ managers, contingent workers, free agents, contractors, community, fans, etc. in order to negotiate and execute a continuous pursuit of unique organizational purpose by implementation of agile people management practices not only within, but also beyond the organizational boundaries, and extending to include human-robot collaboration.*

The conducted research allows outlining several directions for future exploration in the field of agile talent. *First*, new surveys are necessary to explore the adoption of agile talent in business organizations across more countries, not only in developed ones or the Asian Tigers, but also in all member states of the European Union, etc. *Second*, the majority of publications study business organizations as research objects, and minority target units from the state administration (e.g., the military, universities) or the NGO sector. *Third*, the implementation of agile talent in organizations from more industries should be examined in order to construct a richer map of its manifestation and appraise the potential achievement of cherished organizational results through it, identify appropriate methods of its management, make valid comparisons among them, detect and measure the strength of some important relationships. *Fourth*, a strong orientation by researchers to the use of representative samples of (business) organizations in their undertaken scientific projects is necessary in order to be able to make conclusions and recommendations that matter not only to small groups of surveyed entities, but also to all the players in diverse industries, spreading wider good practices and accelerating higher corporate growth. *Fifth*, further exploration of the transformation processes from the organizational status quo in the field of people management to the establishment and dominance of agile talent in companies or their units is needed in order to outline important (dis-)advantages, causes and effects in preferred reliance on specific stakeholders and cultural contexts, and thus performing deeper comparative and critical analysis, and formulating more precise managerial recommendations. *Sixth*, the position of agile talent among an array of other emergent and innovative methods of people management should be unequivocally determined.

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PUBLIC SERVICE BY CHOICE OR CHANCE? IMPLICATIONS FOR POSITIONING PUBLIC ADMINISTRATION EDUCATION AND EMPLOYMENT

ABSTRACT

The purpose of the study is to explore career intentions and motivations behind the aspirations of fourth-year students in the Public Administration bachelor program in Bulgaria for future careers in the public sector. The research, based on survey data, analyzed how academic satisfaction, perception of public sector career opportunities, and alignment with public service values shape student intentions and perceived preparedness for public service roles. Spearman's correlation and Mann-Whitney U tests were used to identify if there are relationships between academic satisfaction, perception of public sector job opportunities, commitment to public service values, and aspiration for careers in the public sector. No statistically significant differences were identified between students who chose Public Administration as their primary program and those who did not, indicating that motivation for public service can be shaped during the course of study. The findings provide insight for both universities and public sector organizations that wish to recruit and retain young professionals who will be committed to advancing the missions of these organizations through curricula, recruitment practices, and employer branding.

KEYWORDS: public administration, career choice, student motivation, public sector employment, public administration marketing

JEL: I23, J24, H83

INTRODUCTION

The study of university student attitudes toward employment in the public sector is essential if we are to adequately address the challenges that the public administration faces when trying to ensure highly qualified services. Various institutions and organizations at the regional and national levels are engaged in the provision of daily solutions to complex economic and societal challenges, such as the design and provision of services for citizens and businesses, economic and health inequalities, and crises, etc. Despite their fundamental responsibilities, they often face significant obstacles in their attempts to attract and retain young professionals, since the offers from the private sector are often more financially appealing.

Students enrolled in higher education in Public Administration are supposed to join the public sector after their graduation that will allow them to contribute to societal well-being and align their professional lives with core values such as altruism, justice, and equity. At the same

time, the long-standing perceptions related to bureaucratic inefficiency and ineffectiveness, lack of options for rapid career growth, and lower salaries compared to the private sector might deter even the most idealistically inclined persons. To properly address such challenges, it is important to understand the factors that influence students' preferences and expectations regarding public sector employment.

Public administration departments must therefore rethink how they present career opportunities to students. Rather than focusing solely on job security or long-term stability, they should highlight the opportunity to contribute to society, develop skills, and pursue meaningful goals. They could, for example, use real examples from young professionals, attend public sector events offer internships, and maintain an active presence on social networks. When students see that public service offers purpose, growth, and real-world impact, they are more likely to view it as a serious and appealing career path.

As an initial step toward a deeper understanding of young people's motivation to join the public sector administration in Bulgaria, the present study is guided by the following research question: *What are the key factors that influence students' attitudes and readiness to seek employment in the public sector?* The answer would reveal the intersection of their educational preparation, personal motivations, and career development opportunities to identify the key elements that might enhance their interest in public service roles.

1. THEORETICAL BACKGROUND

1.1. Is university education important for career choice?

The relationship between students' satisfaction from their higher education experience and their intended career path has been extensively researched as a common theme could be found: students' satisfaction and career intentions are influenced by a complex interaction of cognitive (internal), contextual (external), and role-based (institutional) factors that affect how well students perceive their educational experience aligns with prospect career aspirations.

Cognitive factors, including the desire for self-fulfillment, autonomy, and social status, have been identified as key motivators behind career intentions in the research by Haase & Lautenschläger (2011). Contextual factors, such as family influence, job security, and perceived opportunities, further impact these decisions. Thus, students' career objectives are directly influenced by both their personal aspirations and perceptions of the environmental conditions. These findings align with motivational theories such as the Theory of Social Learning and the Theory of Planned Behavior, which stress the role of intention in translating motivations into action. Zengin et al. (2011) reinforce this perspective as they point out that students often do not view their education as sufficient to prepare them for the day-to-day realities of their intended career, which can further reduce the positive correlation between motivation and professional intent.

James and Yun (2018), based on a survey of Canadian college students, investigate the relationship between students' satisfaction with their higher education experience and employment expectations. Their findings reveal that students' satisfaction was determined by both the academic and social aspects of college experience (e.g., student-faculty interaction,

participation in clubs and organizations, and the perceived quality of education). Also, while students' employment expectations are an important aspect of the higher education experience, they did not negatively affect students' perceptions of their colleges. Instead, students' perceptions of their readiness to join the workforce and their beliefs about what skills they had acquired through their education were associated with higher levels of overall satisfaction. Therefore, universities should seek to improve the quality of their academic programs and better align their curricula with the needs of employers if they wish to increase their students' satisfaction and employment outcomes.

Vartic (2023) expands upon these ideas and adds a comparative generational point of view: while in 2005 self-esteem and respect were the primary drivers of students' career choices, at present, finding the work absorbing and financial stability become the most important drivers of students' career choices. This shift likely reflects changing social values, particularly due to technological advancements and global events such as COVID-19. To provide relevant and effective educational options for the next generation, higher education institutions will need to adapt their academic offerings to meet the changing priorities of Generation Z, who place greater value on independence, rapid reward, and a balance between their personal and professional lives.

Students' attitudes towards specific fields of study, such as economics and organizational theory, often reflect their personalities and their career paths. For example, Opstad (2022) reported that in a Norwegian context, male students tend to be more interested in economics, while female students are more interested in management and organizational theory. Students' preferences for specific academic disciplines often reflect their perceptions of whether these fields are relevant to future roles in leadership positions and the public sector.

Quinlan and Corbin (2023) further advance understanding of how university education may shape career preferences through a qualitative investigation of the evolution of university students' career interests. They challenge traditional vocational psychology theories that assume that career interests are stable from adolescence to adulthood. A survey of 663 graduates from a UK university found that 61% of students reported a change in their career interests during their time at university. These changes were characterized as either a refinement within the same field (30 %), a complete shift to a new career sector (19 %), an increase in clarity regarding their career (12 %), or a complete abandonment of previous career intentions (5 %). Academic curricula (46 %), placements/internships (14 %), work experiences (7 %), and cocurricular activities (6 %) were cited as factors influencing the development of the students' career interests. These results suggest that career interest is a dynamic process shaped by university experiences rather than a fixed trait, and thus emphasize the importance of the integration of career learning into disciplinary curricula.

1.2. Who is the public sector attractive to?

Despite its inherent bureaucracy and structural challenges, the public sector has been perceived as a provider of stable and meaningful employment, as it offers job security, career opportunities, and the chance to contribute to social welfare. If university departments of Public administration have information about what attracts young people to jobs in the public

sector, then they could use this information to develop messages that are more targeted and engaging, and develop curricula that are relevant to their needs and interests. The main question in this section is what type of people are attracted to such career options, and the answers might be found in existing academic research on the topic.

One of the primary motivations for pursuing a career in the public sector is alignment of the work with personal motivations. The term "Public Service Motivation" (PSM), which was developed by Perry and Wise (1990), refers to "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions" (p.368) and prioritizes societal and organizational welfare and describes it through dimensions of civic duty, social justice, compassion, and self-sacrifice. Subsequent studies have revealed the influence of antecedents such as parental modelling of altruism, religious socialization, and professional identification on the development of PSM, which differentiates public sector employees from their private sector counterparts (Perry, 1997).

Pfeifer (2008) utilized data from the German Socio-Economic Panel (GSOEP) and surveys of university students in Germany to examine how risk aversion affects preference for public sector employment. The results showed that high-risk averse students are more likely to enter the public sector due to the inherent job security, although pay may be lower than in the private sector. This wage differential reflects compensating mechanisms: the private sector pays a premium for risk tolerance, while public sector stability attracts risk-averse workers.

More recently, Asseburg & Homberg (2018) conducted a meta-analysis and surveyed 600 final-year students in Germany regarding PSM and sector rewards as predictors of public-sector attractiveness. Although PSM was the most significant predictor of sector preferences, its effect was enhanced when combined with nonmonetary rewards such as career stability and social impact. Additionally, Ni et al. (2022) surveyed 566 Chinese college students and analyzed how occupational values (e.g., prestige, stability) affect their willingness to apply for civil service positions. Political efficacy partially mediated the relationship between occupational values and the willingness to apply for public service positions, suggesting that students are more interested in pursuing a career in the public sector when they feel that their values and effort will have a meaningful impact. Sahinidis et al. (2019) further examined how cultural and economic factors affect students' perceptions of working in the public sector using university students in Belgium and Greece. In Greece, economic instability led students to view the public sector as a stable source of employment and therefore prefer it. In contrast, the students in Belgium viewed the public and private sectors as having similar potential and, therefore, had relatively balanced preferences.

Further, Sahinidis et al. (2019) explored the attitudes of university students in Belgium and Greece, as the goal was to try to understand how cultural and economic factors shape perceptions of public sector employment. In Greece, where economic instability has increased job insecurity, the public sector, for stability, made it a preferred choice among students. In contrast, Belgian students displayed more balanced preferences, influenced by both public- and private-sector opportunities. More recently, Dufault et al. (2023) examined the role of personality traits in influencing interest in public sector careers among Canadian first-year management students utilizing the Big Five personality model. They found that agreeableness

and neuroticism are positively correlated with public sector interest, while extraversion correlates negatively. Students seeking stability and team-oriented activities tend to be interested in public roles, and this is consistent with Pfeifer's (2008) finding that risk-averse personalities prefer the public sector. The researchers also found that federal government roles were viewed as slightly more attractive than municipal or provincial positions and, therefore, indicated that there may be nuances even within public sector preferences.

In the Bulgarian context, Bayrakova (2015) found that the most important work values for university students were economic security, personal development, utilization of ability, achievement, and advancement, while values such as physical prowess, risk, and authority were ranked lower. The results show a strong presence of intrinsic motivation and self-growth objectives, as well as a desire from students for secure long-term jobs and incomes. Notably, female students placed higher values on progress, diversity, altruism, and autonomy than did males; they placed greater value on physical prowess and authority. Thus, the attractiveness of public sector jobs for Bulgarian youth will be based upon whether the public sector can offer opportunities for personal growth and accomplishment combined with economic security, and if so, how well the public sector can balance those factors.

1.3. Can the public sector compete for the next generation?

Due to the increased difficulty in attracting young professionals into public service, the area of "marketing" public sector employment has been a growing area of research. The more recent literature explores how the attractiveness of potential employers can be communicated to Generation Z and to those with high public service motivation (PSM).

Ritz and Waldner (2011) argue that, due to demographic change and increasing competition in the labor market, Human Resource (HR) marketing will become a significant factor in the success of public sector institutions. The researchers surveyed Swiss university students and applied the Person-Organization Fit (P-O Fit) Theory to test the attractiveness of the public sector as an employer. The results found that PSM was a significant predictor of public sector attractiveness and related behaviors such as the likelihood of applying for a job or recommending an organization. While internal motivators are important, external motivators still exist; therefore, a balance must be established when developing employer branding initiatives.

Vandenabeele and Jager (2020) expand on the previous focus by conducting a survey-experiment to determine how recruitment messaging affects perceived attractiveness. PSM moderated the effect of public value-oriented recruitment messaging; specifically, organizations that include public values in their recruitment messaging became more attractive to those with higher levels of PSM. However, Vandenabeele and Jager also noted that the results did not fully align with theoretical expectations, suggesting that additional research is needed to develop practical HR applications and integrate PSM into recruitment strategies.

El-Menawy and Saleh (2023) examined the role of social media platforms as a mediator of the relationship between employer attractiveness and Generation Z's intention to apply for jobs.

Their structural equation model, based on a sample of Egyptian university students, shows that employer image and branding significantly affect Gen Z's decision-making process. Economic value, reputation, and development opportunities were prioritized over diversity and work-life balance. The relationship was partially mediated by social media platforms, which highlight the importance of employer branding strategies that are consistent with the values and digital behaviors of Gen Z. Similar conclusions reached Vieira et al. (2024), who found out that while employer branding is a valuable tool, current models rarely account for Gen Z's expectations such as flexibility, mobility, and technological integration. Traditional Talent Attraction Theories and Gen Z's labor market behaviors have created a disconnect between them, indicating a gap in practical frameworks for this generation.

Descos and Gospic (2019) also focused on Gen Z, but within the context of white-collar work environments. Using qualitative interviews, they identified six key factors that influence employment decisions: trust and freedom, flexibility, alignment of values, meaningful work, preference for small enterprises, and digital affinity. The results support the idea that organizational ethics and work-life fit are important factors for younger job seekers, as the importance of nonmonetary factors in employer branding and recruitment strategies increases.

More recent research further highlights the complexity of job preferences among public sector employees and confirms that both symbolic and instrumental factors play a significant role. In addition to a discrete choice experiment that found that symbolic attributes, such as alignment with public values and the organization's mission, influence public service job preferences, instrumental factors such as job stability and salary remain the most influential, even among individuals with high levels of PSM (Ripoll et al., 2025). The findings suggest that appeals to a mission-driven organization alone are insufficient and that public sector marketing should also emphasize concrete, tangible benefits. An analysis of online employer reviews showed that public sector employees prioritize social attributes such as interpersonal respect and team dynamics over purely altruistic motivations when recommending their employers (Vogel & Satzger, 2025). These challenge previous assumptions that inherent motivation is the primary driver of public employees and support a multidimensional approach to employer branding.

Taking into account these findings, university departments of public administration would face a strategic challenge: how to better position public service as a desirable career path. While government institutions are encouraged to adapt their recruitment messages to meet the expectations of Gen Z, academic programs must also evolve. The curricula should be revised to reflect contemporary public sector realities, such as digital transformation, policy innovation, and citizen participation. Students should be provided with coherent examples of how a degree in Public Administration can lead to meaningful careers. Collaboration between public institutions and universities, access to internships, and visible career outcomes can help students see the value of their studies.

1.4. Research hypothesis

Based on the literature reviewed on public sector employer attractiveness, PSM, and career decision making, the study examines the degree to which two dimensions of student engagement with public sector employment, intention and perceived preparedness, can be influenced by three elements of individual perception: academic satisfaction, perceived career opportunities, and alignment with public service values. The focus is on undergraduate public administration students. Students' reported perceptions of their educational experiences will be compared to determine whether they have a positive relationship with the intentions of those who pursue careers in the public sector, as well as with their self-assessed sense of preparation for such careers. These relationships are formally stated in the following hypotheses.

Hypothesis 1a (H1a):

Students who report higher satisfaction with their studies in public administration are more likely to intend to seek employment in the public sector after graduation.

Hypothesis 1b (H1b):

Students who report higher satisfaction with their studies in public administration are more likely to feel well prepared to enter the public sector workforce after graduation.

Hypothesis 2 (H2):

Students who perceive greater career opportunities and job stability in the public sector are more likely to intend to seek employment in this sector.

Hypothesis 3 (H3):

Students who report a greater alignment with public service values and socially important causes are more likely to express an intention to work in the public sector after graduation.

Hypothesis 4 (H4):

Students whose first program choice was the Public Administration program show a stronger alignment with public service values.

To test these hypotheses, a structured methodology is employed to capture the major factors that affect students' decisions about public sector careers. The study is based on the previously discussed theoretical frameworks and uses a quantitative approach to assess the effect of academic satisfaction, perceived career opportunities, and the alignment of students' values with those of the public sector.

2. METHODOLOGY AND DATA

2.1. The sample

The survey was conducted in April 2025. The questionnaire was distributed to students from the Department of Management and administration in a university situated in Sofia, Bulgaria. They are in their fourth year of study in the accredited Bachelor program of Public Administration and were expected to graduate in July 2025. The group consists of 69

students, as those who attended lectures and seminars were given the option to complete the questionnaire. The number of students who responded was 36, which represents a response rate of 51,2 %. To ensure clarity and comprehension, the questionnaire was administered in the students' native language, Bulgarian.

2.2. Research method

The survey items were consolidated into a single online questionnaire comprising 39 questions and administered via the Microsoft Forms platform. Students were previously informed about the purpose of the study, their rights as participants, and the confidentiality of their responses. They were explicitly told that participation was voluntary and they could withdraw from the study at any time.

The questionnaire was designed as a pilot survey to explore factors that might influence Public Administration students' career intentions and serves as a starting point for future research efforts of the respective department. It includes three main sections that correspond to the researched constructs and represent the independent latent variables.

- satisfaction with studies (10 items);
- perceptions of career opportunities and stability in the public sector (10 items);
- personal values related to socially important causes (10 items).

Each item was rated on a 5-point Likert scale in descending order (strongly agree = 5 to strongly disagree = 1). The vertical configuration was chosen to avoid the selection bias (Maeda, 2015). Two questions measured the intention to seek employment in the public sector (1 item) and the preparedness to enter the public sector workforce upon graduation (1 item), as they represent the dependent variables.

At the end of the questionnaire, six questions (control variables) were added regarding demographic characteristics (3 items), the frequency of attendance at lectures and seminars (2 items), and a completed internship in a public organization (1 item). The author fully acknowledges the existence of validated questionnaires, but this pilot survey was deliberately kept concise and in line with the department's needs. The insights gained would guide the refinement and development of future iterations.

To assess the internal consistency of the measurement scales, the Cronbach alpha coefficients were calculated for each of the three hypothesized constructs. Given the limited sample size ($N = 36$), the results are treated as preliminary but provide useful information for future scale refinement. There is good to excellent reliability across all scales (George & Mallery, 2016, p. 240). The first scale measuring satisfaction with studies in public administration (Construct 1) had a Cronbach alpha of 0.804, indicating good internal consistency. The second scale assessing perceptions of career opportunities and job stability in the public sector (Construct 2) yielded a coefficient of 0.864, which is again considered good. The highest reliability score was observed for the third scale, which aims to capture personal values and interest in socially significant causes (Construct 3), with a Cronbach's alpha of 0.921 (excellent internal consistency).

2.3. Applied statistical analyses

To test the hypotheses, a set of nonparametric statistical techniques was applied. Given the ordinal nature of the data and the small sample size, Spearman's rank-order correlation was used to assess the associations between the three primary constructs and the two dependent variables: (1) intention to seek public sector employment, and (2) perceived preparedness for public service roles (H1a, H1b, H2, and H3). To explore potential differences in PSM by students' initial program choice (H4), a Mann-Whitney U test was used. This nonparametric alternative to the independent samples t-test is suitable for comparing median scores between two independent groups, especially when the data are ordinal and nonnormal. This analytical approach, though exploratory, was selected to align with the research objectives and data structure, as it provided an initial empirical basis for future, more extensive research on public sector career motivations among university students. Data were analyzed with IBM SPSS Statistics (Version 25).

2.4. Limitations

The empirical research has its set of limitations that need to be taken into consideration while interpreting the results:

- 1) First, the number of participants in the study ($N = 36$) was relatively small, which limits the statistical power and generalization of the results. Although the response rate was reasonable for the class size, the results are exploratory and cannot represent trends of a larger group of public administration students in Bulgaria. Additionally, the sample had a disproportionately large number of women (72.2%), which may affect the results regarding value alignment and professional motivation.
- 2) The second limitation is that the survey data were collected in one university department in Sofia. Therefore, the findings may have been influenced by the specific local academic culture and the labor market situation at the time.
- 3) Third, all data were self-reported through a structured questionnaire, which introduces the potential for response bias, particularly social desirability bias. Students may have responded in ways they believed were expected of them, especially on items related to values, public service, and career intentions, despite assurances of anonymity.
- 4) Fourth, while the internal consistency of the scales was confirmed through acceptable Cronbach's alpha values, the questionnaire was developed as a pilot instrument specifically for this study. Although informed by existing theoretical frameworks, it would benefit from further refinement and formal validation before being used in larger-scale research.

Last but not least, the study employed a cross-sectional design and captured student perceptions at a single point in time. As a result, it is not possible to establish causality between the independent variables (e.g., satisfaction with studies, perceived opportunities, value alignment) and the dependent outcomes (e.g., intention to join the public sector). Longitudinal research would be particularly valuable for tracking how these attitudes develop

over time and in response to real-world experiences, such as internships or exposure to the labor market. These limitations do not diminish the value of the findings, but instead point to important elements of future research that can build on the preliminary insights offered here.

3. RESULTS

The demographic characteristics and educational backgrounds of the 36 respondents are outlined in Table 1. Females represent 72.2% of the sample population and males 27.8%. Most students (66.7%) are 22 years of age, and 22.2% are 23. Since the average age of the sample is 22.5 years, the sample falls into the Gen Z cohort. When students were asked which bachelor's degree program they initially preferred, 38.9% chose Public Administration. Almost all of the respondents (97.2%) indicated that they had completed an internship in a public agency or organization. A large number of interns are anticipated because completion of internships is required for graduation from this program. Regarding their assessment of the internship, 33.3% rated it as excellent, 19.4% rated it as good, and 38.9% rated it as average; a small percent (8.3%) rated it as poor. With respect to lecture attendance, 47.2% of students reported attending lectures often, and 30.6% reported attending every week. Only a few students (13.9% and 8.3%) indicated that they attend lectures sometimes or rarely. Similar results were obtained regarding seminars (practical classes): 44.4% reported attending often, and 38.9% indicated attending every week.

Table 1. Demographic and background information of the respondents

Variable	Sample (N)	Percent (%)
Gender		
Female	26	72.2
Male	10	27.8
Total	36	100.0
Age (in completed years)		
21	1	2.8
22	24	66.7
23	8	22.2
24	1	2.8
25	1	2.8
29	1	2.8
Total	36	100.0
First choice: Public Administration		
Yes	14	38.9
No	22	61.1
Total	36	100.0
Completed internship		
Yes	35	97.2
No	1	2.8
Total	36	100.0
Evaluation of internship experience		
Poor	3	8.3
Average	14	38.9

Variable	Sample (N)	Percent (%)
Good	7	19.4
Excellent	12	33.3
Total	36	100.0
Frequency of lecture attendance		
Rarely	3	8.3
Sometimes	5	13.9
Often	17	47.2
Every week	11	30.6
Total	36	100.0
Frequency of seminar attendance		
Rarely	2	5.6
Sometimes	4	11.1
Often	16	44.4
Every week	14	38.9
Total	36	100.0

Source: own data from survey

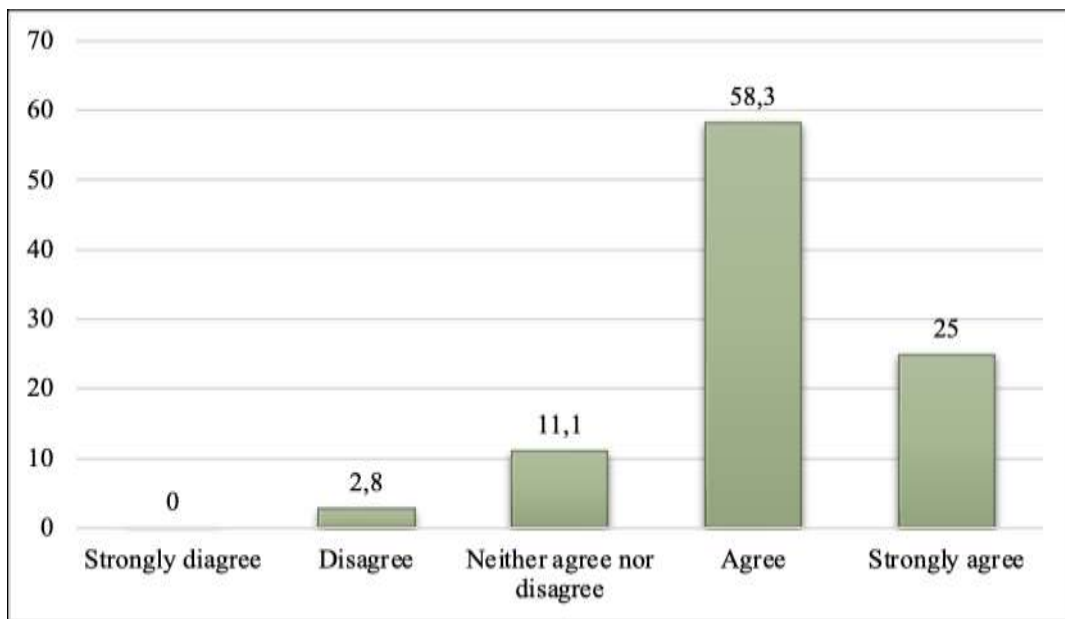
Construct 1: Academic Satisfaction and Preparedness

This construct was used to assess students' levels of satisfaction with their public administration studies and their perceived readiness to enter the public sector workforce. Reliability analysis was performed on all the items within the construct and revealed high internal consistency (Cronbach's alpha = .804). To evaluate the contribution of each item to the overall scale, Corrected item-total correlations (CITC) and Cronbach's Alpha if the item was deleted were evaluated, and confirmed that most items had good contributions to the overall scale, as values ranged from .261 to .645. Due to their greater contribution to the reliability of the construct and the greater theoretical relevance, two items were selected for visual representation:

- Item 1: *'I am satisfied with the quality of teaching in the public administration program'*. (CITC = .645)
- Item 4: *'I feel confident in applying the knowledge I have gained in a public sector job'*. (CITC = .629)

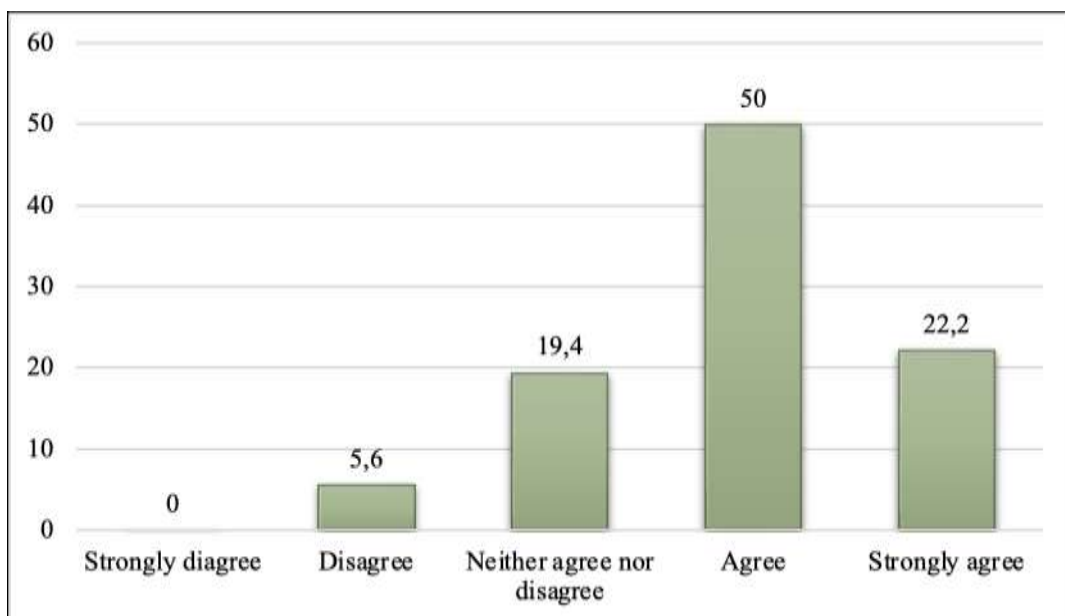
Bar charts for these two items are presented in Figures 1 and 2. Most students reported satisfaction with the quality of the teaching, and a substantial proportion expressed confidence in applying their knowledge in a practical setting. These patterns indicate a general positive perception of academic experience and readiness for work in the public sector.

Figure 1. Distribution of responses to ‘I am satisfied with the quality of teaching in the public administration program.’



Source: own data from the survey

Figure 2. Distribution of responses to: ‘I feel confident about applying the knowledge I have gained in a public sector job.’



Source: own data from the survey

To examine the relationship between academic satisfaction and the further intention of seeking employment in the public sector (H1a), a Spearman rank order correlation was conducted: $\rho(36) = .579, p < .001$. The correlation is positive, which indicates that the more satisfied students are with their studies, the stronger their intention to join the public sector

after graduation. According to Cohen's (1988) guidelines, this represents a moderate-to-strong effect size. The determination coefficient of determination ($\rho^2 = .579^2 = .335$) shows that approximately 33.5% of the variance in the intention to work in the public sector is associated with their satisfaction with the academic program.

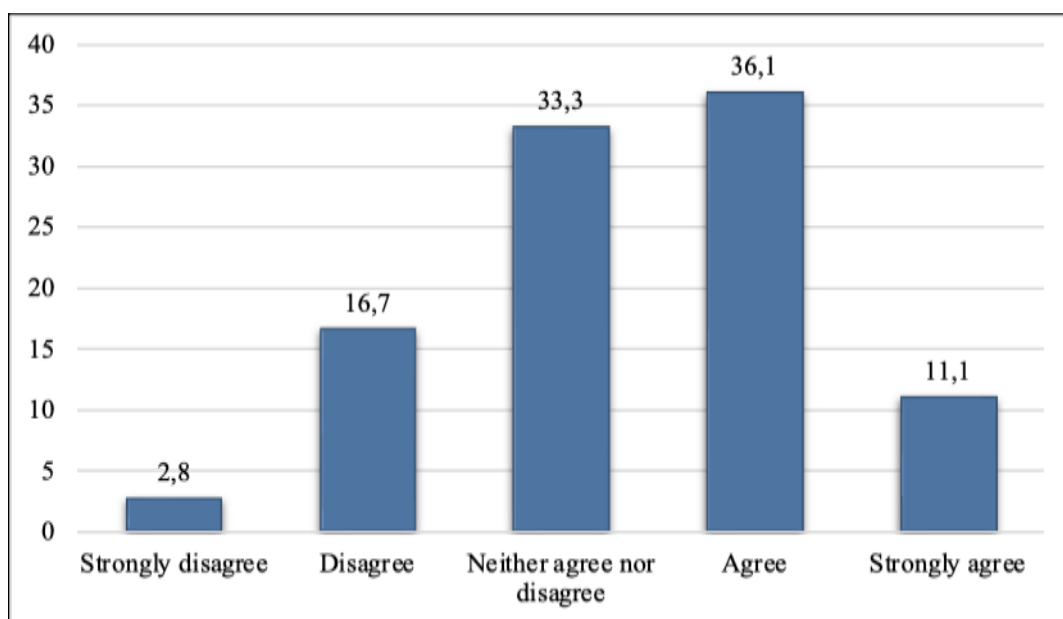
With reference to H1b, a second Spearman correlation was conducted to test the association between students' satisfaction with their public administration studies and the sense of preparedness to start work in the public sector. The results revealed a statistically significant positive correlation, $\rho(36) = .428, p = .009$, but with a moderate effect size. The coefficient of determination ($\rho^2 = .428^2 = .183$) suggests that approximately 18.3% of the variance in the perceived preparedness is associated with their satisfaction with the academic program.

Construct 2: Perception of Career Attractiveness and Stability in the Public Sector

Construct 2 evaluated the students' perceptions of career opportunities, job stability, and the long-term attractiveness of working in the public sector. The measurement scale had good internal consistency ($\alpha = .864$). High CITC values (.70), indicating how well each item correlated with other items on the scale, were found for many of the items. To illustrate response patterns, three of them with the highest scores were selected for bar chart presentation.

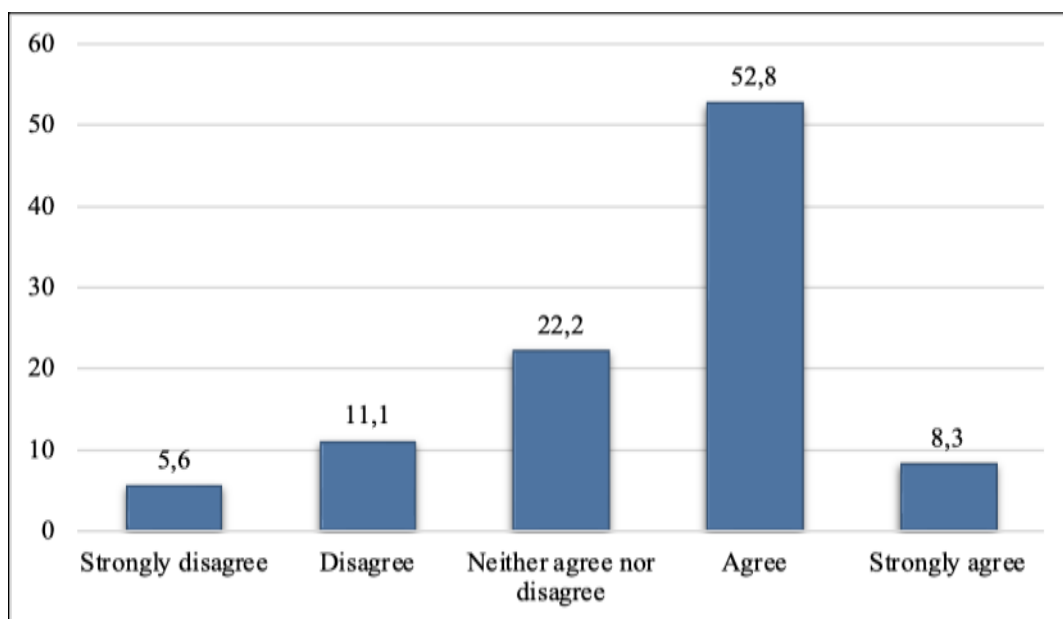
- Item 12: *"The career growth opportunities in the public sector appeal to me."* (CITC = .801)
- Item 14: *"I perceive the public sector as a good platform for long-term career development."* (CITC = .759)
- Item 20: *"The overall reputation of the public sector encourages me to consider it as a career option."* (CITC = .727)

Figure 3. Distribution of agreement with the statement: *‘The career growth opportunities in the public sector are appealing to me.’*



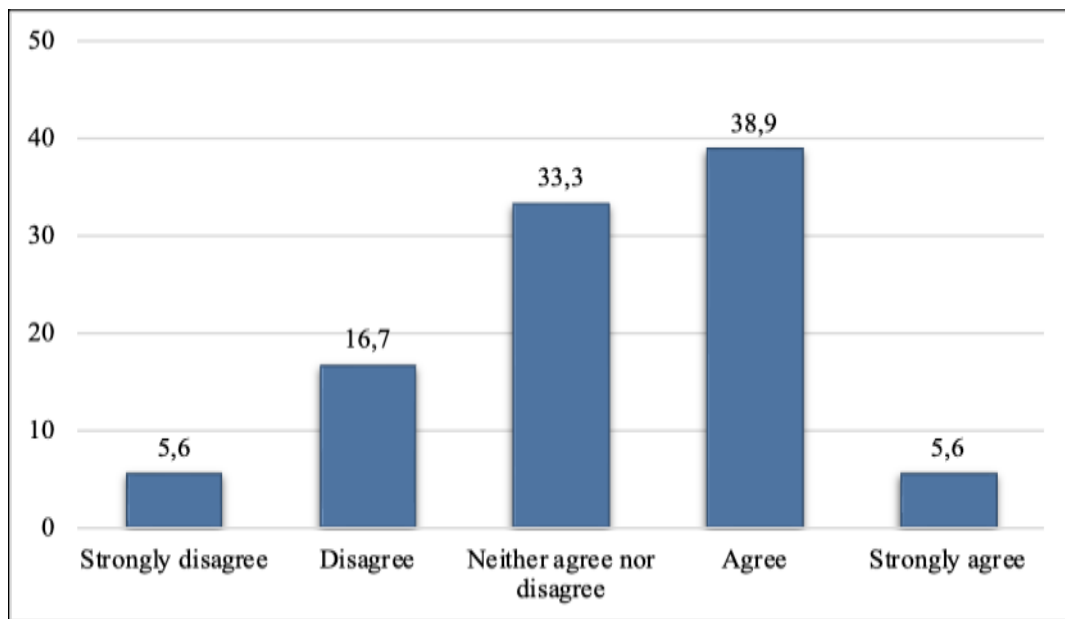
Source: own data from the survey

Figure 4. Distribution of agreement with the statement: *“I perceive the public sector as a good platform for long-term career development.”*



Source: own data from the survey

Figure 5. Distribution of agreement with the statement: “The overall reputation of the public sector encourages me to consider it as a career option.”



Source: own data from the survey

A Spearman's rho (ρ) was calculated to determine whether the strength of student perceptions of public sector career opportunities was related to their intention to pursue public sector jobs: $\rho(36) = .728$, $p < .001$. The result showed a positive relationship, indicating that when students perceived greater job security and career advancement opportunities in the public sector, they were more likely to express interest in employment in this area. The coefficient of determination ($\rho^2 = .728^2 = .530$) indicated that approximately 53.0% of the variance in intention to work in the public sector is explained by students' perceptions of public-sector career attractiveness and stability.

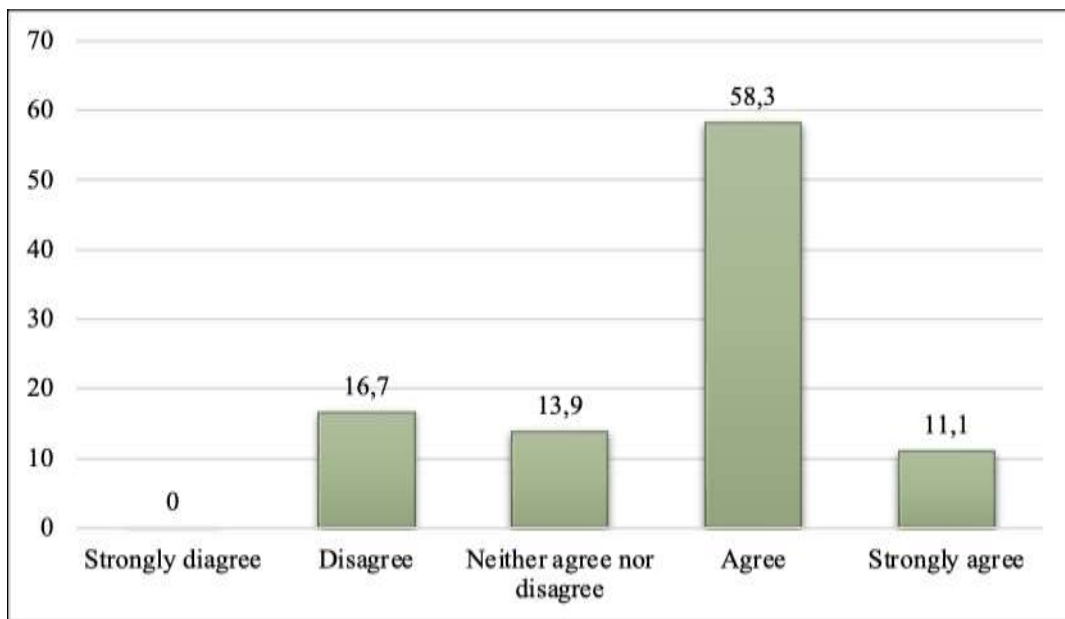
Construct 3: Public Service Motivation

Construct 3 focused on students' motivation to work in the public sector, specifically on intrinsic motivators, civic duty, social impact, and value alignment. The Cronbach's alpha for the 10 items was the highest ($\alpha = .922$) and indicated excellent reliability. Also, the CITC values for all items are adequate, with several values greater than .70. The two items with the highest score are used to illustrate the distribution of students' responses.

- Item 22: “I feel a sense of responsibility to contribute to the provision of quality public service.” (CITC = .853)
- Item 27: “I am motivated by the idea of working for the public good.” (CITC = .821)

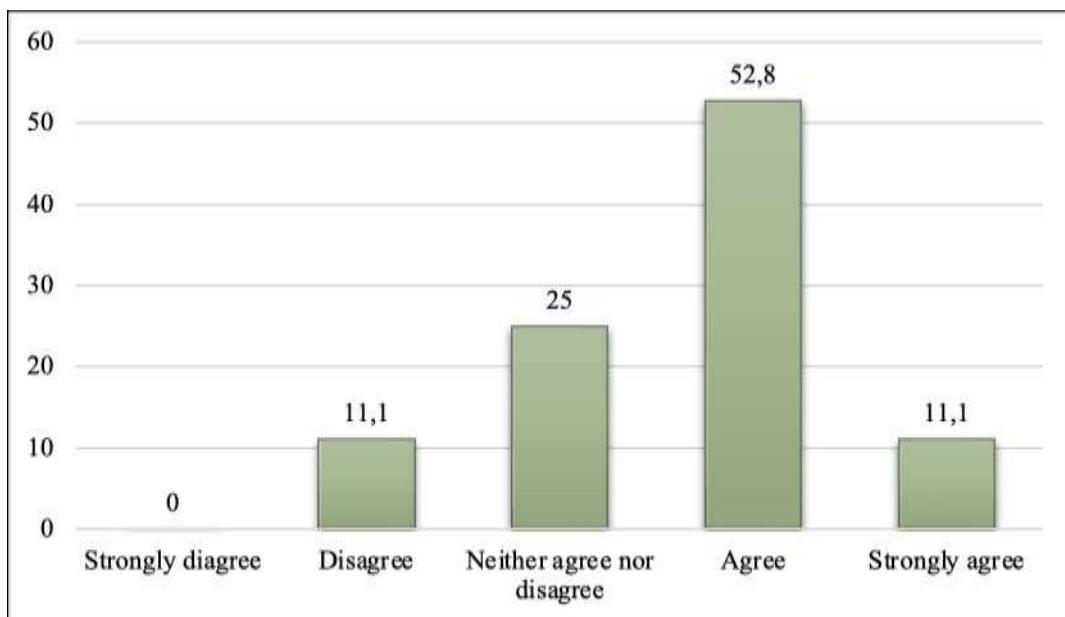
Figures 5 and 6 present the frequency distributions for the two statements. Response patterns reflect a generally strong agreement with values orientated toward public service among the students.

Figure 6. Distribution of agreement with the statement: *“I feel a sense of responsibility to contribute to the provision of quality public service.”*



Source: own data from the survey

Figure 7. Distribution of agreement with the statement: *“I am motivated by the idea of working for the public good.”*



Source: own data from the survey

To test the relationship between the alignment with public service values and their intention to work in the public sector, Spearman's correlation was again applied: $\rho(36) = .548$, $p < .001$. The correlation was positive, which means higher endorsement of public service values and socially important causes corresponded to a stronger intention to pursue public sector employment. This reflects a large effect size. The coefficient of determination ($\rho^2 = .548^2 =$

.300) reveals that approximately 30.0% of the variance in students' employment intention is attributable to their alignment with public service values.

The fourth hypothesis aims to test whether the students whose first choice was Public Administration demonstrated greater alignment with public service values than the other students. This was tested using a Mann-Whitney U test, as the results indicated that there was no statistically significant difference between the two groups, $U = 124.50$, $z = -0.962$, $p = .336$. The result suggests that a student's motivation to contribute to public service is not necessarily dependent on their initial program choice. Even those who entered it as a second and so forth choice appear to express comparable levels of alignment with values such as social responsibility, civic duty, and the desire to serve the public good. This illustrates that the academic environment and curriculum may support or reinforce students' commitment to public service regardless of their original reasons for choosing to enroll in the program.

4. DISCUSSION

This study provides several practical recommendations to university departments of Public Administration that seek to increase student recruitment and retention. With the identification of key factors that motivate students to consider careers in the public sector, such as academic satisfaction, perceived career opportunities, and alignment with public service values, the respective departments can develop more strategic, evidence-based approaches to attract the 'right' students (Van der Wal, 2015). These insights also have direct implications for public administration sector marketing campaigns, which can be designed to place emphasis on aspects that are most valued by potential candidates and to oppose prevailing stereotypes.

The positive relationship between academic satisfaction and career intentions indicates that university departments should pay greater attention to the provision of high-quality teaching and the creation of curricula directly applicable to students' future employment. Prospective students are more likely to be attracted to programs in which the department has made it clear how their educational experiences will translate into meaningful, tangible employment opportunities (Boyadjieva & Ilieva-Trichkova, 2015). As a result, departments should provide clear messaging on course content, skill development, and the real-world application of public administration education during recruitment campaigns. They should also continually review their curricula to ensure that the courses are relevant, applied, and innovative. For example, including topics such as digital transformation, crisis management, and citizen engagement can help prepare students for emerging governance challenges. Teaching methods should also emphasize active learning based on case studies, projects, and collaboration with practitioners. The Department from which the survey respondents were selected actively develops such initiatives. One of them is called 'Open Semester', as prominent speakers with strong reputations and career paths in the public sector are invited to speak to students. These events allow them to learn valuable lessons, gain insight into real-world experiences, professional trajectories, and the practical challenges associated with public service. Meetings also provide a platform for students to engage in dialogue, ask questions, and gain insights that can shape their career expectations and motivation.

In terms of the respective Public Administration Department's connections with national and subnational public institutions and organizations, these relationships create opportunities for students to participate in internships, practitioner-led lectures, and other career development activities. Internships play an important role in shaping students' perceptions of public sector work. However, if internships are not meaningful and well-supported, they cannot reach their full potential. As a result, departments must work closely with host institutions to ensure that internships provide real responsibility, mentorship, and structured reflection. To support a more systemic approach to internships, departments can require regular updates from students, establish shared learning goals, and recognize students' contributions to the chosen internships.

The strong relationship between perceived job stability and career growth emphasizes the importance of framing public administration as a "mission-driven" choice and a smart, stable career path. Departments can partner with alumni and public institutions to promote examples of successful career trajectories and the opportunities for advancement, leadership, and policy impact available in the public sector. Departments can share these examples of success through career days and social media to redefine the public sector's image, break down prevailing stereotypes of bureaucracy, and instead portray the public sector as a dynamic and professional field.

The results of this study reinforce the need for public sector institutions to use more targeted and evidence-based marketing strategies to attract young professionals with a mission. Although academic program play a significant role in shaping public service motivation, students' career decisions are also influenced by how the public sector communicates its identity, values, and opportunities. This calls for a more proactive and strategic approach to public sector employer branding, particularly for Generation Z. Strategies to communicate this new value proposition must deliberately shift the public sector's identity and values away from procedural rigidity toward its potential for societal transformation. Instead of allowing established stereotypes, such as the idea that government work is inefficient, does not encourage innovation, or limits career progression, outreach efforts can focus on the wide variety of professional roles available in the public sector, its capacity for policy innovation, and the opportunities for meaningful impact.

Rebranding the public sector and communicating to Gen Z requires a commitment to engaging with the communication preferences of this age group. Public sector organizations must commit to the adoption of the digital-first approach and use platforms and formats that resonate with younger audiences (Smillie & Scharfbillig, 2024). Short-form video, authentic narratives, and transparent depictions of daily work can effectively communicate both the purpose and the lived experience of public service. Messages that highlight transparency, personal development, and ethical leadership, and that do not rely too heavily on institutional language, are more likely to capture the attention of prospective applicants who base their career choices on values and lifestyle considerations.

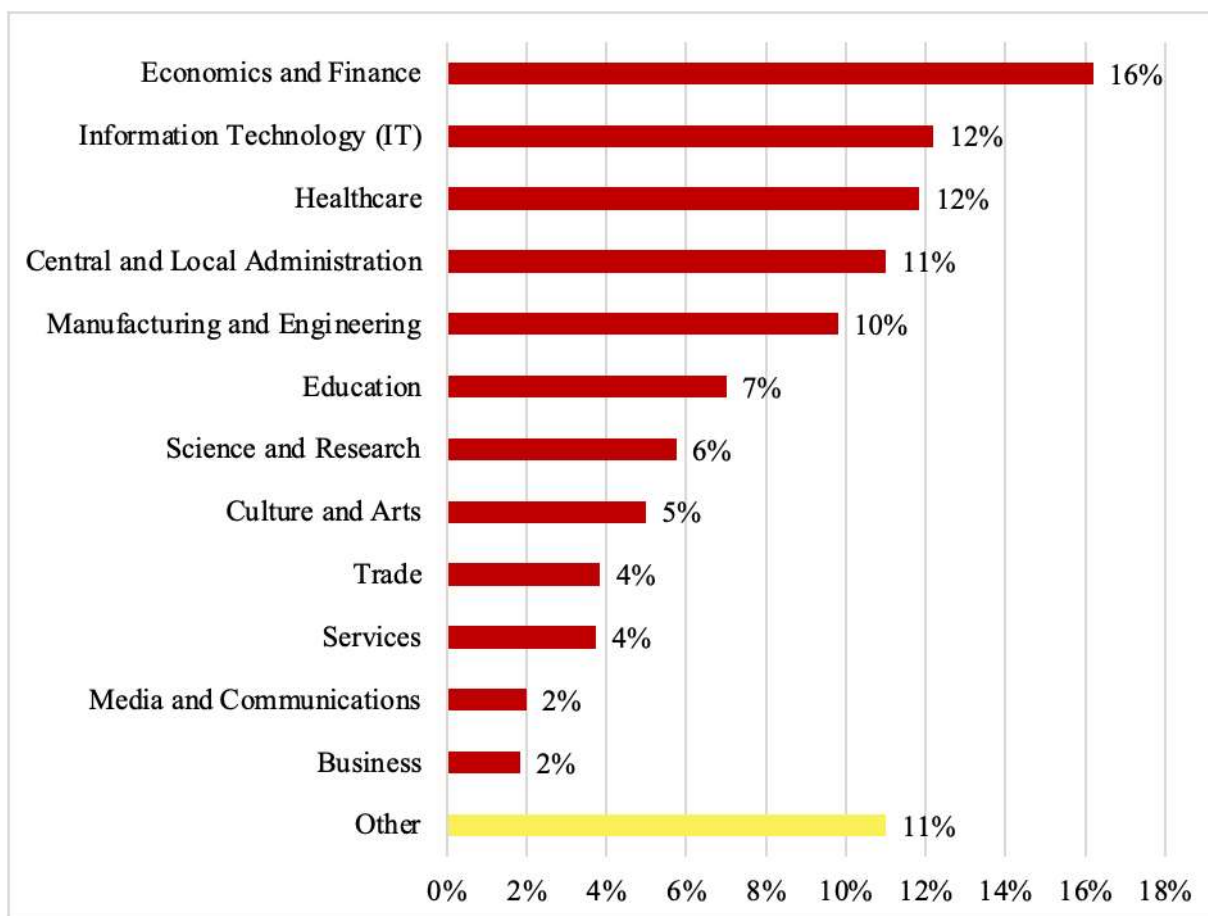
Equally important as promoting the public sector's image and reframing its value proposition is highlighting its career development infrastructure. Providing clearly articulated career development pathways and investing in skills such as project management, policy design, and

digital transformation can position government work as a platform for long-term professional growth. Promoting mobility between departments and participation in international initiatives can further enhance the appeal to graduates seeking dynamic and varied career paths. Strengthening collaboration with universities offers an effective channel for delivering these messages and experiences.

Consistent support for public service motivation throughout the sample, even among those who did not initially choose public administration, reveals that the program has strong potential to cultivate or reinforce intrinsic motivations over time. The lack of a statistically significant difference between the two groups further suggests that departments should not restrict their recruitment efforts to candidates who already possess PSM. A helpful analogy for this type of message development can be found in Bulgaria's recent military recruitment campaign entitled "Join the Bulgarian Army. Give Your Skills a Higher Purpose," which utilized modern multimedia, social media outreach, and purposeful messages that emphasized professional development, stability, and national contribution. A similar narrative approach that combines societal purpose with clear career benefits can help enhance the attractiveness of public sector careers to Gen Z.

These findings, especially the significance of perceived career opportunities in shaping public sector intent and the widespread ambivalence about government employment, are consistent with national trends in Bulgaria. Data collected by CNTS in May 2025 indicate that Bulgarian students rank work-life balance as the most important factor when selecting a workplace, with 76 % prioritizing it. They strongly prefer hybrid work models that combine office presence with remote work, and show an apparent inclination toward a four-day workweek with six-hour days. Flexible start times are preferred to fixed schedules, while traditional working hours are the least attractive. Many seek professional independence: 41% aspire to own a business, and 34% prefer freelance work, while government or municipal employment ranks as the least desirable option. Financial stability matters, but passion for the job and alignment with personal interests carry greater weight in career decisions. Popular career sectors include culture and the arts, as well as business and media, reflecting a preference for creativity and self-expression. At the same time, fields like finance, IT, healthcare, and public administration are less appealing (see Figure 8). Team culture is an important factor, with 95% rating it as important or very important. Students value mutual support, shared responsibility, open communication, and a balance of youthful energy with experienced colleagues. They prefer collaborative, inspiring workplaces that offer diversity and strong leadership (TSentar za Novi tehnologichni sistemi za NBU, 2025).

Figure 8. Least preferred employment sectors among Bulgarian students (May 2025)

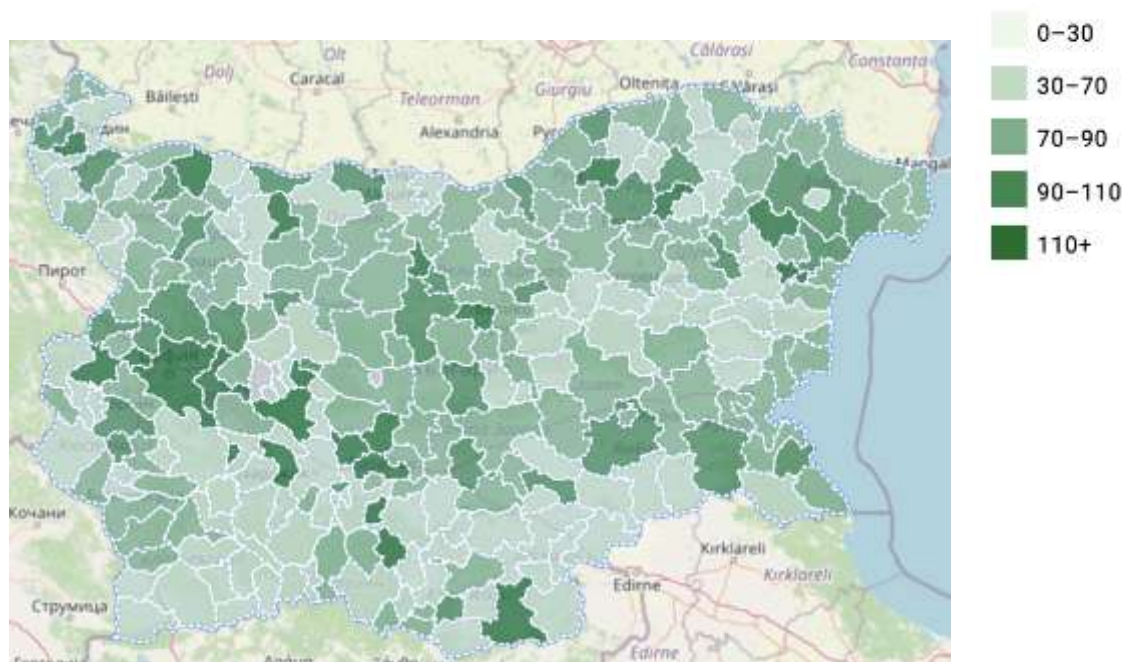


Source: TSentar za Novi tehnologichni sistemi za NBU, 2025

The results of this study present both an opportunity and a challenge for public institutions in terms of attracting and retaining young talents: Since the current student population is comprised of Gen Z, which views employment within government as less appealing than other career paths, public institutions must develop strategies to transform their image, and thus better appeal to the preferences of the next generation of employees. This means transforming their images from being seen as inflexible, hierarchical, and slow-moving to being marketed as flexible, mission-driven, and offering impactful contributions to society. Communication efforts will need to focus on what young adults consider important: achieving a healthy balance between work and life, having opportunities to grow professionally, and working in an inclusive, collaborative environment. Although salary may not be the main motivating factor, it is important that the communication strategy clearly communicates to future employees the available career advancement, skill building, and decision-making opportunities. Data from the National Statistical Institute in Bulgaria indicate that the average gross monthly salary for public institutions varies depending on the specific area of activity, but overall salaries remain significantly lower than those in the most competitive private sector industries. For example, within core public sector domains, the State Administration records monthly averages between 1 241 EUR and 1 542 EUR during the first three months of 2025. Despite the stability and security associated with these roles, the figures remain

substantially below high-skill private sector occupations such as information technology (2 748-3 338 EUR) and finance (1 767-2 323 EUR). This pay gap underscores the structural challenge public institutions face when they compete for highly qualified graduates, especially in areas where the private sector offers both higher pay and greater flexibility (NSI, 2025).

Figure 9. Average salary in the private sector as a percentage of that in the public sector, 2023



Source: 265 Istorii za ikonomika, n.d.

It should be noted that the national averages mask significant regional variation in the public-private pay balance. As for 2023 (the latest available information), in a significant number of municipalities throughout Bulgaria, public sector salaries exceed those in the private sector, especially in the southern regions (265 Istorii za ikonomika, n.d.). The most significant disparities in favor of public employment occur in municipalities that have on their territories major state-owned energy enterprises, such as Kozloduy (private sector salaries at only 34.3% of public levels), Batak (39,9%), and Radnevo (49,4%). In contrast, municipalities with modern mining operations or export-oriented manufacturing show the reverse pattern, with private sector wages outstripping public pay, most notably in Panagurishte (147,2 %) and Pirdop (160,7 %). In large economic centers, the difference between the two sectors is more moderate, reflecting the diverse economic structures and a larger workforce that tends to balance wage disparities.

CONCLUSION

Higher education has the potential to influence PSM, but the structural constraints on this influence must also be recognized. While value-based curricula, practitioner involvement, and applied learning may positively affect some students' attitudes toward joining the public sector, others may continue to be reluctant. This often arises from deeply ingrained perceptions about government jobs, including that government employment is less efficient than the private sector, that resources available are limited, innovation is not encouraged, and that salaries are lower. These perceptions cannot be easily altered by education alone.

Therefore, university program that promote motivation to serve the public interest are interdependent with reform efforts within the public sector itself. If graduates perceive that there is an alignment between their values as shaped in the academic environment and the conditions they will experience in their future workplaces, then they will be more likely to act upon the motivations created while pursuing their degrees. To create this alignment, public organizations must demonstrate transparency in decision-making processes, compensation systems that provide equitable pay for skills and responsibilities, and an organizational culture that supports innovative problem-solving, adaptability, and self-initiative.

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SERVING BEYOND DUTY: THE SOCIAL RESPONSIBILITY IN PUBLIC ADMINISTRATION

ABSTRACT

This article examines social responsibility practices, particularly volunteer initiatives, implemented in selected Bulgarian public administrations. It focuses on how the principles of public social responsibility (PSR) are adopted within the organization and put into action. This topic is important because it focuses on the role of public institutions in the transformation of contemporary society. The study aims to identify the formal, internal, or informal frameworks that govern PSR and employee volunteering. It also seeks to identify distinctive good practices. Using qualitative document analysis, the study reviews formal frameworks, documented initiatives, and evidence of employee volunteering. A chronological review is conducted to highlight changes and identify trends. The findings show that although in most cases there are no formal PSR strategies, ministries regularly participate in socially beneficial projects, often initiated by the employees themselves. The analysis highlights the high fragmentation of actions, but at the same time, increasing interest in CSR-related activities in Bulgaria. It is emphasized that PSR can improve public trust, social cohesion, and sustainable governance. The article provides a broad overview of PSR practice in Bulgaria, as well as suggestions for future development.

KEYWORDS: public social responsibility (PSR), corporate social responsibility (CSR), volunteering, public administration, good governance

JEL: M14, H83, D64

INTRODUCTION

The concept of Corporate Social Responsibility (CSR) has formed a long-standing focus of academic and business discourse. Generally understood to be a business model that helps a company be socially accountable to itself, its stakeholders, and the public, CSR encourages companies to have a positive impact on society and the environment. Apart from making profits, it calls for actions that benefit the community, employees, and the planet. Common CSR activities include philanthropy, ethical labor practices, environmental activities, and volunteerism.

While CSR principles are well established in the private sector, their application in the public sector is a newer and interesting area of research. In this context, CSR becomes Public Social Responsibility (PSR). PSR can be seen as responsible practices and policies that public administrative bodies undertake beyond their legally and functionally defined roles, voluntarily contributing to the well-being of society and the environment. Unlike corporations, which are primarily driven by profit and shareholder value, public institutions are essentially driven by the public interest and the effective delivery of public services. Thus, the motivation behind PSR and the way it is implemented are different. For public administration, practicing PSO is not about building brand image or attracting consumers, but about increasing public trust, creating a culture of service, and showing greater concern for the well-being of the community. In the field of public administration, PSR refers to activities

that go beyond the role, functions, and service delivery for which it is usually responsible and aim to contribute to the broader public good. This perspective takes the position that public administration, rather than simply implementing policies, should be a catalyst for sustainable development, ethical labor practices, local empowerment (e.g., in the community), transparency, and accountability in the institution. These efforts can be crucial in transforming public administration institutions into active participants in the creation of more equitable, inclusive, and responsible social structures. The most obvious example in this regard is **environmental care**, including the integration of renewable energy sources, the reduction of carbon emissions, and comprehensive waste management. Here, it is important to finance green infrastructure, such as public transport, energy-efficient housing, and urban green spaces. This contributes to long-term environmental sustainability, in line with the implementation of environmental regulations to protect natural resources and public health. In the area of **ethical labour practices**, public administration must ensure that the public sector pays workers fairly and maintains safe working conditions. It is necessary to promote work discipline and culture, and the active participation of administrators in public projects and volunteering. It is imperative to create a new working environment that encourages initiative, proactivity, and recognition of contributions, transforming civil servants from executors into change agents. Another important dimension of social responsibility is **community engagement and development**, and here public administration can help to actively engage citizens through public discussions, participation in public consultations, advisory forums, and participatory budgeting mechanisms. By funding and supporting programs led by community or local organizations, public administration will truly respond to the community's needs. In addition, civic awareness and participation can be increased through greater accessibility and transparency of public policies and services, and joint decision-making. This will increase trust in public institutions and their work. The pillars of democratic governance are **transparency and accountability**, which can be strengthened through awareness, anti-corruption measures, and independent bodies that oversee those who exercise power and who have no interest in decision-making. Public administration also has the opportunity to create, participate in, and support charitable and other innovative civic projects, such as social programs, innovative service delivery mechanisms, support for charitable organizations, and awards for socially responsible companies. Such initiatives would contribute to a different influence of the public sector in solving complex social problems.

These are just some examples that show how public administration can go beyond its traditional tasks to promote social responsibility and help create a more sustainable, fair, and resilient society.

In order to better understand the development of public social responsibility and its expression in different contexts, it is necessary to review the main studies and theoretical approaches in the literature.

1. LITERATURE REVIEW

The concept of CSR has changed over the years from a voluntary business practice to a strategic approach that requires effort and targeted action, not only in the private sector but also in the public sector. While CSR traditionally referred to the responsibilities of private enterprises toward stakeholders, some scientific research supports its extension into the public sector under the framework of PSR (Chymis, D'Anselmi, & Triantopoulos, 2016). This extension stems from recognition that public administration is a central institutional actor in shaping societal, environmental, and economic conditions, and thus must adopt proactive responsibility beyond legal compliance and service delivery. Research on CSR in public

administration emphasizes the need to integrate it into institutional work. Aras et al. (2015) argue that, based on institutional economics, public choice theory, and management research, responsible public administration improves institutional trust, increases transparency, and promotes sustainable development. Budai & Gáspár (2021) point out that the OECD's general principles for public administration – reliability, accountability, openness, and efficiency – are increasingly being rethought through the lens of CSR and linked to broader social and environmental commitments. Some empirical studies – the analysis by Jurkowska-Gomułka, Kurczewska, and Bilan (2021) on the Polish central administration, provide clear indications that CSR in public institutions manifests itself in several areas, both in policy planning and in operational activities, although reporting is inconsistent. Poland's experience shows that CSR is gradually being institutionalized through specific databases of good practices, working groups, projects, and reports. However, it has not yet been systematically implemented in public administration. Comparative data from Lagos State, Nigeria, show that CSR activities – mainly in the areas of social welfare, education, and infrastructure – complement government programs, with public administration acting as both a facilitator and a participant (Aina-Obe, 2019). Petrov (2023) explains volunteering as a social phenomenon that simultaneously benefits the volunteer, the recipient, and society as a whole, i.e., it has both individual and collective benefits. The analysis distinguishes between internal motivation – personal satisfaction, skill development, and moral satisfaction – and external social benefits, including enhanced social cohesion, increased community resilience, and improved public services. His article emphasizes that volunteering can serve as a strategic tool for achieving long-term social goals, especially when incorporated into public policy. Furthermore, Petrov argues that institutional support, clear legal frameworks, and public recognition are essential to maximizing the mutual benefits of volunteering for individuals and communities. Kereziev (2025) notes that during the COVID-19 pandemic, innovative applications of CSR in public administration have emerged in the Bulgarian context, including digital communication platforms and volunteer support networks. He explains that in a crisis, the introduction of CSR in the public sector is accelerated, and the strategic value of socially responsible management is enhanced. A review of various literature sources again shows that there are no standardized frameworks for CSR, and that not only in Bulgaria but also in many other places, there is significant fragmentation. This is also evidenced by the institutional analysis conducted by Chymis and Skouloudis (2014), which shows that the national perception of CSR is strongly linked to institutional quality management, civic activism, and management effectiveness. Some authors pay special attention to the role of CSR in public administration, linking it to organizational effectiveness and quality management systems (Střihavková, Svobodová, & Vysloužilová, 2021). They insist that integrating CSR principles – stakeholder engagement, sustainable resource use, ethical management – into organizational strategy can lead to benefits such as improved public image and greater employee engagement. There are also challenges related to the lack of a common understanding and definition, poorly developed implementation mechanisms, and inconsistent political will and desire for implementation. Pevnaya et al. (2020) examine governmental support for volunteering in the Russian Federation as a driver for co-production of public services and sustainable development. Their study emphasizes that institutional support, including legal regulation, funding, and other resources, is crucial for integrating volunteering into public administration. The authors point out that post-communist countries face a number of specific challenges: weak civil society, lack of trust in government-led initiatives, and fledgling volunteering. At the same time, they identify state-led volunteering as a possible tool for democratization, but only if it is implemented with transparency and mutual trust between public institutions and citizens. Milkov (2023) presents an additional perspective by linking PSR to social entrepreneurship in public administration. He believes that promoting social entrepreneurship

in state institutions not only meets the needs of society but also becomes a catalyst for innovation in administrative processes. The author proposes a three-sector model involving the public, private, and voluntary sectors. Public administration acts both as a regulator and as a participant in socially oriented initiatives. His analysis highlights the potential of administrative structures to create conditions that promote employment, facilitate career development, and work towards the inclusion of vulnerable groups, but this can only happen if there are adequate resources, policies, and effective cross-sectoral partnerships.

The theoretical and empirical studies presented highlight the need for a more in-depth examination of PSR in a specific national context. This also determines the methodological approach of the present study.

2. METHODOLOGY

The study's methodology is a qualitative, documentary-analytical design. The documents were selected through a comprehensive institutional review of all 19 ministries, using predefined criteria related to PSR, volunteering, and community engagement. Publicly available strategies, reports, policy documents, and project descriptions were extracted from the official websites of the ministries and supplemented with all editions of the Institute of Public Administration's annual collection of good practices, particularly the section on the "Social Responsibility" award. The analysis uses thematic coding to identify recurring patterns, formal frameworks, and emerging practices, enabling comparison across ministries despite differences in reporting transparency.

Publicly available information from the official websites of ministries, strategic documents, and policy reports was systematically reviewed to identify existing social responsibility frameworks, initiatives, and employee volunteering practices in the 19 active ministries in Bulgaria. Attention was focused on the Concept for the implementation of social responsibility issued by the National Institute for Social Security, as it represents a rare, formalized framework for CSR in a national context. In addition, the annual compendium "Good practices in public administration" (2015-2024), published by the Institute of Public Administration, was examined to identify, categorize, and compare relevant "social responsibility" initiatives over time. Evidence of both formal policy integration and informal or ad hoc practices was assessed, with a comparison across years to identify trends, variations in participation, and emerging patterns in PSR in the public sector.

The article contributes to the outline of current practices in the field of public social responsibility, but the study also has several methodological limitations. The analysis is based exclusively on publicly available documents, official websites, and published reports, which means that internal practices, informal initiatives, and non-public institutional procedures remain outside the scope of the article. Since the official published information of the ministries varies significantly in scope, frequency, and transparency, the comparison between institutions may not fully reflect the actual scope of PSR and volunteering activities. Document analysis cannot reflect employees' internal motivation or institutional attitudes. This suggests a more in-depth study using interviews, focus groups, questionnaires, and other tools. These limitations suggest that the results provide an indicative rather than a comprehensive overview and highlight the need for future research using mixed methods and more in-depth empirical research.

The information obtained through documentary analysis allows for a clearer conceptual reframing of PSR and reveals its evolution.

3. REFRAMING PUBLIC SOCIAL RESPONSIBILITY

Increasing importance is being attached to the implementation of sustainable solutions, which requires public administrations not only to enforce laws and provide services, but also to take on a proactive, strategic role and work actively for the well-being of society. What business defines as CSR, the public sector must reflect through PSR. Legal responsibility alone does not guarantee responsiveness to complex social needs, i.e., it is no longer enough to simply report on finances or ensure that there is no misuse of resources; a commitment to addressing larger social and environmental issues is also necessary. The transition to PSR is also defined as part of a global movement called Global Social Responsibility (GSR), linking CSR, PSR, and ISR through volunteering (Budai & Gáspár, 2021). To implement this concept, public administration should not only monitor, regulate, and/or promote CSR in other areas, but also adopt and institutionalize these principles in its work. This is a model in which it serves as an example and creates and affirms public values in a way that meets public requirements.

The Global social responsibility reveals several key elements, shown in Figure 1.

Figure 1. Elements of Global Social Responsibility (GSR)

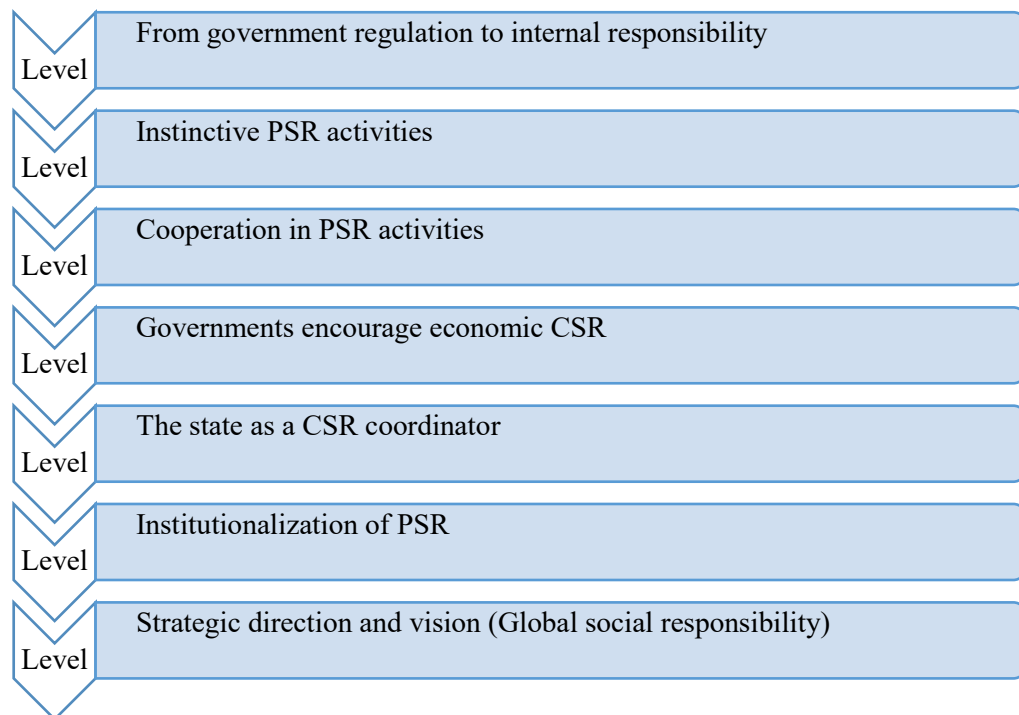


Source: Own, adapted from a study by the National University of Public Service, Budapest, Hungary
<https://en.uni-nke.hu/>

A study conducted by the National University of Public Administration (2017-2018) outlines the development of PSR, covering seven consecutive stages. It begins with CSR stimulated by governments. Later, it moves on to the implementation of separate, often random and informal CSR activities carried out within the public administration. Such actions subsequently attract and develop into structured partnerships (level 3). At the next level 4, there is already proactive political support for economic CSR, which leads to a strengthened coordinating role for the state in cross-sectoral CSR efforts (level 5). PSR is institutionalized at levels 6 and 7, incorporated into activities, and embedded in long-term strategies. This final phase reaches its peak with the mutual penetration and complementarity of CSR, PSR, and ISR in a broader model - global social responsibility (GSR). In GSR, all sectors and societies develop on the basis of sustainability and ethical management.

The levels of PSR described and explained are summarized in Figure 2.

Figure 2. Levels of public social responsibility (PSR)



Source: Own, adapted from a study by the National University of Public Service, Budapest, Hungary
<https://en.uni-nke.hu/>

This development highlights that PSR must transform and move from random or reactive initiatives to targeted and deliberate practices oriented towards strategy and vision, or responsibility must be distributed and visible, embedded in management at all levels. Achieving global social responsibility through the leading role of public administration can only happen if there are clear strategic frameworks and responsible cross-sectoral cooperation. In addition, it is necessary to institutionalize PSR practices and use clear indicators to monitor and track progress.

At the beginning, there is **state regulation**, which is transformed and becomes an internal responsibility. While the concept of CSR is most often associated with business, it was historically the state that laid the groundwork for its emergence in the early 20th century. Through legislation and policies, governments initiate the process of regulating the economy by imposing principles of responsibility on the private sector (business). In this way, they act as an external catalyst by forcing businesses to comply with certain social and environmental standards. However, this model of **internal initiative for social responsibility and self-regulation** does not exist for public administration itself. While the state-imposed responsibility on others, its own voluntary practices, those that went beyond its direct mandate, remained on the periphery. This distinction between the state's role as a regulator and its own role as a subject of voluntary activity is the central focus of this study.

Instinctive PSR activities - Research in this field clearly indicates that public institutions, in addition to their mandatory tasks, are almost constantly engaged in activities that fall within the scope of PSR, yet they do not manage or recognize them as such. This "instinctive" form of PSR is particularly interesting because the motives behind it are diverse and often purely personal. This level emerges spontaneously and is not regulated by internal policies or strategies. The activities stem from the personal initiative of employees, their civic consciousness, and a desire to contribute to society.

Cooperation in PSR activities - In a democratic system of public administration and open governance, it is a natural and logical progression for public bodies to become active players in implementing CSR activities. This applies particularly to partnerships that establish cooperation with both economic operators and NGOs. At this stage, the PSR no longer relies solely on a series of impulsive or isolated actions from within but becomes a structured and collaborative commitment. This phase of the PSR is characterized by the establishment of cooperation and the implementation of initiatives in which public entities do not act in isolation but leverage their special position and use the public sector to form and participate in partnerships to achieve public goals.

Government promotion of economic CSR goes beyond direct involvement and includes the government's role as a facilitator and catalyst for social good among all economic actors. Governments introduce and implement a wide range of policies, programs, and services to encourage economic actors to deepen their CSR activities. Here, the function of public administration is shifting from a direct participant in CSR to a facilitator of CSR. It is not enough for the government to carry out its own voluntary activities; it wants to create an ecosystem in which private enterprises receive economic incentives to implement their own social and environmental projects.

The state's role as a CSR coordinator is achieved in the most advanced phase of the CSR process, when the state assumes a coordinating role and fully recognizes the strategic importance of social responsibility. Here, public administration moves from standard promotion of CSR or individual participation in initiatives to actively taking the initiative to "engage" in cross-sectoral cooperation. In this case, the government acts as a central hub that coordinates and supports joint programs involving the public, private, and non-profit sectors.

Institutionalization of CSR can occur when CSR concepts are applied at all levels and form the basis of even the operational work of public sector institutions. This level marks the transition from ad hoc initiatives to a structured approach. Public bodies, especially local authorities, are beginning to recognize a new set of voluntary tasks and activities, integrating them into their core functions and decision-making processes.

Strategic direction and vision (Global social responsibility) - The ultimate evolution of social responsibility is the emergence of a unified framework that transcends sectoral boundaries. Research has identified several processes that point towards the rise of what we can call GSR. At this highest level, the distinct concepts of CSR, PSR, CCSR, and ISR - which are based on volunteering - are combined and integrated into a single, cohesive vision.

For a better understanding of the different levels and accompanying initiatives for PSR, examples are presented in Table 1.

Table 1. Examples of PSR practices across development levels

Levels	Examples
1	An external catalyst, compelling businesses to comply with social and environmental standards. NA examples
2	Informal donations: Employees collecting funds for a colleague in need or a local charitable cause. Educational initiatives: Staff who voluntarily organize lectures or training sessions for the local community, using their professional skills. Environmental protection activities: The informal organization of clean-up events in a city park or around an administrative building.
3	Public-private partnerships: Joint projects to address social or environmental challenges, such as developing new infrastructure or implementing sustainable urban programs. Volunteering initiatives: Organizing joint volunteer days where employees from the public administration and private companies work together on a community project. Shared expertise: Public bodies providing technical expertise or resources to support a CSR project of a private company, and vice versa.
4	Policy and legislative frameworks: Implementing tax incentives, subsidies, or favorable procurement rules for companies with strong CSR practices. Public recognition and awards: Establishing national awards or certification programs to publicly recognize and celebrate businesses that demonstrate excellence in social responsibility. Information and support services: Providing resources, training, and guidance to help businesses, especially small and medium-sized enterprises (SMEs), develop and implement their own CSR strategies.
5	Cross-sectoral cooperation: The government initiates and manages partnerships that bring together businesses, civil society organizations, and public institutions to address complex societal challenges. Strategic resource allocation: Unlike previous levels, the state may allocate budgetary resources to fund and implement these coordinated programs, ensuring their long-term sustainability and effectiveness. These programs often cover the government's own operations, embedding social responsibility into the very fabric of public service. Unified vision: The government develops a unified vision for social responsibility that aligns with national development goals. It serves as a model, demonstrating how to integrate social and environmental considerations into all aspects of governance.
6	Formal frameworks: Partnership systems evolve beyond simple cooperation and gain a new dimension with formal, institutional frameworks. This might involve creating dedicated departments, committees, or roles responsible for managing social responsibility initiatives. Strategic integration: PSR is no longer an optional add-on but is integrated into the institution's overall strategy, mission, and vision. This ensures that social and environmental considerations are a central part of policy-making and service delivery. Synergy and efficiency: By institutionalizing these efforts, synergies between inter-sectoral cooperation are strengthened. The process becomes more efficient, leading to more impactful and sustainable outcomes for the community.
7	Integrated approach: responsibility is no longer seen as the exclusive domain of a single sector. Instead, a collective and integrated approach is adopted, where businesses, governments, and individual citizens all play a crucial, interconnected role in addressing global and local challenges. Shared vision: A shared vision for sustainable development and social well-being is created, fostering a culture where all actors work in synergy towards common goals. Collective impact: The focus shifts to maximizing collective impact. The state, for instance, not only facilitates CSR and conducts its own PSR activities but also actively nurtures and supports a culture of individual volunteering (ISR) within its workforce and the wider society.

Source: Own

After clarifying the conceptual levels and logic of PSR development, the question arises as to what extent these models are actually reflected in Bulgarian public administration. The

following section presents empirical observations, starting with good practices from Bulgarian ministries.

4. BEST PRACTICES IN PSR: EVIDENCE FROM BULGARIA

Although it is a practice that is familiar and inherent to the private sector, social responsibility is increasingly seen as an integral part of the work of public administration. In this context, the present analysis aims to examine how and to what extent the 19 ministries in the Republic of Bulgaria apply the principles of social responsibility through their policies, programs, councils, initiatives, and internal practices.

Table 2 summarizes the information about official documents, main activities, and examples of social responsibility of 19 Bulgarian ministries.

Table 2. Overview of social responsibility practices in Bulgarian ministries

Institution	Special SR document	Main social responsibility activities	Examples
Ministry of Agriculture and Food	No	Support for low-income households, quality of rural life	“Easter basket” campaign, CAF public service improvement initiatives
Ministry of Culture	No	Cultural inclusion through events and programs	Cultural projects with community participation, initiatives supporting minority access to culture
Ministry of Defense	No	Civil protection, crisis response, staff welfare programs	Military support during natural disasters, welfare services for armed forces families
Ministry of Economy and Industry	Partial	Sustainable investments, CSR initiatives via Advisory Council	Participation in national CSR advisory bodies, promoting responsible business practices
Ministry of Education and Science	No	Educational CSR programs, volunteering clubs in schools	Integrating CSR topics into school curricula, creating student clubs for social projects
Ministry of e-Government	No	Digital accessibility, transparency through open data	Publishing open datasets for public use, improving access to e-services for all citizens
Ministry of Energy	No	Addressing energy poverty, sustainable transition	Programs supporting vulnerable households in paying for energy
Ministry of Environment and Water	No	Environmental sustainability, green public procurement	Implementing a national environmental strategy, encouraging sustainable consumption and social justice in resource management, and promoting eco-friendly purchasing
Ministry of Finance	No	CSR-related reporting for public investments, budget transparency	Requiring disclosure of social and environmental investment impacts
Ministry of Foreign Affairs	No	Support for Bulgarian citizens abroad, cultural diplomacy	Organizing assistance for nationals in crisis situations, cultural exchange projects with social impact
Ministry of Health	No	Healthcare access for vulnerable groups, preventive campaigns	National vaccination drives, screening programs in underserved areas
Ministry of Innovation and Growth	No	Support for social entrepreneurship, CSR recognition awards	Funding for social enterprises, organizing CSR competitions

Institution	Special SR document	Main social responsibility activities	Examples
Ministry of Interior	No	Public safety campaigns, disaster relief volunteering	Road safety awareness drives, staff participation in firefighting, and emergency response
Ministry of Justice	No	Social program in correctional facilities, volunteering	Award-winning social projects in prisons, a certificate for social responsibility through good practices, and reintegration initiatives
Ministry of Labor and Social Policy	Partial	Activities: Partnerships with NGOs, social inclusion programs	National strategies to assist vulnerable groups, corporate volunteering initiatives
Ministry of Regional Development and Public Works	No	Infrastructure with social affordability and access focus	URBACT initiatives, including the CITIES4CSR project (Empowering Local Public Authorities to Co-Design and Implement CSR Policies), an EU-funded action under URBACT III that supports cities in forming cross-sector CSR partnerships and implementing socially responsible urban development practices.
Ministry of Tourism	No	Indirect CSR through sustainable tourism policies	Promoting eco-friendly travel practices and responsible tourism campaigns
Ministry of Transport and Communications	No	Road safety campaigns and public awareness	National strategy promoting shared responsibility for traffic safety
Ministry of Youth and Sports	No (no active site with CSR info)	Not established	Not identified due to a lack of available public information

Source: Own (Adapted from the official websites of the Bulgarian ministries.)

This study focuses only on the 19 ministries in Bulgaria, and the results show that these institutions lack formal or independent strategies for CSR or PSR. Public authorities work on social responsibility issues on a piecemeal and ad hoc basis, often implementing isolated projects with an element of CSR woven into their organizational tasks. This suggests that some structures (the Ministry of Economy and Industry and the Ministry of Labor and Social Policy) at least partially form the basis for formalization, indicating that CSR principles have begun to be integrated into institutional frameworks. In addition, the Ministry of Labor and Social Policy includes topics related to social responsibility in strategic documents for working with vulnerable groups, for creating and supporting social enterprises, and for cooperation with NGOs.

Although no policy documents have been published, all the ministries examined show some degree of social responsibility. Examples include environmental projects, such as the "green" public procurement by the Ministry of Environment and Water, and social projects, such as the "Easter basket" campaign by the Ministry of Agriculture for vulnerable households. Other ministries also engage employees in socially beneficial initiatives – such as the Ministry of the Interior's volunteer work in disaster relief or the Ministry of Defense's crisis response-while others present new approaches, such as school clubs based on the social responsibility of the Ministry of Education, the Ministry of Justice's award-winning rehabilitation schemes. However, there is no publicly available evidence of such organized, structured public volunteering programs that are formalized, undertaken, and followed only by state employees across all 19 ministries.

This targeted review found that the PSR in Bulgaria's ministerial system is fragmented and functions as individuals managing projects, partnerships, and not the state as a whole. Some ministries also participate in international cooperation or benefit from EU-funded programs, which usually leads to a more formalized approach to social responsibility. However, the results show that there is increasing recognition of the ability of PSR's capacity to increase public trust, generate civic responsibility, and increase employee engagement, provided that future efforts are synchronized, institutionalized, and made more visible to the general public.

In the Bulgarian public administration, **a rare example** of a formalized policy regarding the PSR is the concept of applying social responsibility in the activities of the National Social Security Institute (NSSI) (2018-2021). This strategic document, in line with the principles of ISO 26000, outlines social responsibility as an institutional commitment beyond legal obligations. It identifies three priority areas: employee responsibility (e.g., safety at work, non-discrimination, professional development), responsibility to society (e.g., transparency, anti-corruption measures, facilitating access for disadvantaged groups), and environmental care (e.g., energy efficiency, conservation of resources). The concept explicitly calls for the promotion of staff participation in volunteer campaigns, which reflects the official recognition of volunteering as part of the institutional culture.

It is important to note that future studies of such practices are recommended at the district and municipal level, where more examples of direct community work are expected to be found.

In the next part of the article, various projects from across the public sector related to social responsibility will be discussed. The Institute of Public Administration (IPA) holds a competition aimed at promoting the creativity of civil servants and the good practices are collected in a ***Collection of Good Practices in Bulgarian Administration***. In order to stimulate employee motivation and improve the organizational culture of public organizations to meet societal needs, through competition, the IPA seeks to expand the sharing of valuable experience and expertise. IPA is the knowledge-sharing hub within the administration, promoting good governance principles and their application. While earlier editions in 2015 and 2016 included other thematic categories, from 2017 onwards, a special category, "Social Responsibility," was introduced in the competition. This category is open to all public administrations at the national and local levels. An analysis of the collections reveals a relatively stable trend, with an average of 23-25 good practices appearing each year. For 2024, the number of applications dropped to just ten (see Figure 3). Nevertheless, even within years or editions with fewer submissions, individual elements or projects linked to social responsibility and employee volunteering can still be identified.

The number of good practices in the "Social Responsibility" category is shown in Figure 3.

Figure 3. Good practices in “Social Responsibility” 2016-2024



Source: Own (Adapted from the Collection of good practices in Bulgarian administration, Institute of Public Administration (IPA), <https://www.ipa.government.bg/bg>, 08.2025)

The review of good practices from 2016 to 2024 clearly shows that although public administration in Bulgaria does not operate within a unified national framework for PSR, there are individual institutions that regularly undertake socially beneficial initiatives. Most of them are strongly linked to employee volunteering, even though it is not regulated by a specific legal act. (Table 3).

Table 3. Good practices in social responsibility and volunteering (2016-2024)

Year	Institution	Good practice
2016	Ministry of Environment and Water	Organizing employee volunteer teams for river and forest clean-up campaigns
2017	National Revenue Agency	Charity initiatives by staff to collect funds and goods for orphanages
2018	Ministry of Defense	Military and civilian staff participating in emergency rescue and community rebuilding
2019	Ministry of Agriculture, Food and Forestry	Organizing food donation drives for low-income families
2020	Ministry of Education and Science	Teachers and administrative staff volunteering in digital literacy campaigns for disadvantaged students
2021	National Social Security Institute	CSR concept implementation, including staff-led volunteer charity campaigns
2022	Ministry of Interior	Police and administrative staff volunteering in road safety awareness campaigns in schools
2023	Ministry of Health	Medical staff volunteering for free preventive check-up days in rural areas
2024	Ministry of Energy	Employee volunteer program to support energy efficiency awareness in vulnerable households

Source: Own (Adapted from the Collection of good practices in Bulgarian administration, Institute of Public Administration (IPA), <https://www.ipa.government.bg/bg>, 08.2025)

A consistent trend from year to year is this approach to direct community benefit: **environmental clean-up campaigns** (2016) and **charity events for orphanages** (2017), as well as **food donation** programs for vulnerable families (2019), are indicative of the

commitment to meeting urgent social needs. Several ministries have mobilized their personnel for **emergency and crisis response** – notably the Ministry of Defense's disaster relief efforts (2018) and the Ministry of Interior's road safety campaigns in schools (2022). The COVID-19 period (2020-2021) brought a surge in socially responsible activities with a **digital and institutional SR dimension**, such as online literacy campaigns for disadvantaged students and the National Social Security Institute's formalized social responsibility concept incorporating volunteering. **Health and sustainability** are on the agenda (from 2023 onwards): medical volunteering in the countryside and energy efficiency awareness projects at vulnerable homes indicate a swing away from reactive aid and toward preventive, capacity-building programs. This transformation means that public Bulgarian institutions no longer view volunteerism as solely charitable; they are witnessing volunteering practices becoming a strategic strategy of social development and employee engagement, and also a means of developing public trust.

Overall, the trend points to **fragmented yet persistent** PSR practice – largely project-based, dependent on institutional leadership, and without systematized inter-ministerial coordination. However, the recurring presence of staff-led volunteerism demonstrates a strong potential foundation for future formalization of volunteering and social responsibility as integral components of public sector governance.

The results obtained highlight the need for systematization and clearer institutionalization of PSR. Therefore, strategic recommendations should be proposed.

RECOMMENDATIONS

In order to improve and institutionalize PSR in Bulgarian public administration, several strategic recommendations can be proposed. Firstly, there should be **an understanding and encouragement of employee engagement**, as well as systematic research (internal or with academic partners) to examine how civil servants participate in socially responsible initiatives and what motivates their participation. These findings can serve as a basis for developing policies that encourage voluntary participation and civic engagement. **Effective incentives for employees need to be created, including material and symbolic incentives such as formal recognition, career development opportunities, flexible working hours for volunteering, and departmental awards**, to encourage consistent participation in social responsibility projects. Another recommendation is **to measure and evaluate the impact**. This means using clear indicators to measure the social impact of PSR initiatives internally (morale, employee satisfaction, and loyalty) and externally (public trust, institutional legitimacy). It is essential to increase **transparency and visibility**. These projects should be publicly announced through official websites, reports, and public campaigns. Sharing the results of social responsibility and employees' contributions across organizations would increase public trust and thus foster a culture of responsibility in institutions. **Incorporating PSR values** into organizational strategy is fundamental to integrating social responsibility into human resource management practices and institutional strategies. This will link volunteer efforts and activities with social impact to mission, performance management, and staff development. Finally, it is important to build **organizational commitment and promote public trust through leadership**. This involves the strategic management of PSR to motivate the workforce, increase institutional loyalty, and promote ethical and socially responsible behaviour, leading to transparency, public trust, and the development of democracy.

These steps would gradually take public administration to the next level on the path to becoming a recognizable agent of global social responsibility. The proposed measures outline

possible directions for the development of PSR in the public sector. On this basis, the main conclusions of the study can be summarized.

CONCLUSION

Public social responsibility (PSR) in public administration refers to voluntary, value-based actions by government institutions that go beyond legal and regulatory mandates to promote social well-being. The concept positions public administration not only as a regulator but also as an active participant in sustainable development, community engagement, and social equality. A review of the 19 ministries in Bulgaria shows that there is no unified national framework for PSR. However, some ministries demonstrate partial integration of these principles into their policies and activities. Ministries often participate in a range of socially responsible projects, from environmental sustainability programs to community-based initiatives linking services to broader social value creation. According to studies of official websites and a competition for “Collection of Good Practices” run by the Institute of Public Administration, socially beneficial projects remain, but are often fragmented and ad hoc. Examples of this include participation in the CITIES4CSR project, green public procurement policies, the Easter Basket campaign, award-winning rehabilitation projects, etc. Although employee volunteering is visible – for example, in firefighting, disaster relief, and digital literacy campaigns – it remains without an official legal mandate or systematic institutional support. Despite the relative stability in the number of good practices presented annually, the lack of structured frameworks for volunteering and inter-agency coordination limits the potential impact of these efforts.

The study provides recommendations for 1) creating a PSR strategy, 2) developing mechanisms to support and encourage employee volunteering, and 3) implementing standardized impact assessment tools. Through the example it sets, public administration can establish a public standard for ethical behavior and civic responsibility by promoting a culture of transparency, active participation, and sustainable management. Ultimately, structured and institutionalized PSR practices have the potential to transform Bulgarian public administration into a more trusted, responsive, and socially engaged actor in modern society.

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INTER-SITUATION CONNECTIVITY AS A KEY PROBLEM OF PUBLIC GOVERNANCE AT LOCAL AND SUB-SITUATIONAL LEVELS IN BULGARIA

ABSTRACT

This article is dedicated to inter-situational connectivity as an essential problem of public governance at the local and national level in Bulgaria. The article analyzes the spatial features of the overlap between the concepts of connectivity and region. However, this shows us that the presence of an administrative-territorial unit and the determination of the parameters of public governance cannot help but reveal the features of regional development. To make it more straightforward, Bulgarian scientific thought does not perceive the change in the conjuncture with the use of a new methodology and the formation of regional development policies. Moreover, the entire palette of knowledge and skills that brings about new moments in regional life is essential for new and young specialists in regional development. Two examples, the municipalities of Pavlikeni and Tsarevo, are examined, and the corresponding characteristics and task levels are presented, which show the internal and external picture of spatial development. Some assumptions are made regarding connectivity and the region as concepts, which show how to use the new methodology of regional research more rationally and clarify several ongoing processes. The author proposes indicators for assessing the level of connectivity in regional development. Regional values present in small urban centers, and the technical

and environmental protection infrastructure, affect the state and load on the natural environment, which is a task of increased difficulty for Bulgarian municipalities. They do not make infrastructure an absolute municipal priority.

KEYWORDS: public governance, regional development, infrastructure, connectivity, administrative-territorial unit

JEL: R11, B40, J11, N9, O18, R23

INTRODUCTION

The term "connectivity" is present not only in literature but also in everyday language and refers to the possibility of interaction between separate territorial entities by building a connection between them. Connectivity in the 21st century has increasingly been framed as an integrated concept that helps explain various scientific directions and clarifies some issues. In our case, we will accept connectivity as a concept encompassing technologies and infrastructure that connect two or more settlements or countries. Depending on the infrastructure in place at international borders, connectivity enables instant communication across time zones, regardless of geographical location. A massive set of telecommunications technologies, including the Internet, fiber optic cables, and mobile networks, made this global network possible, and it is an essential element of regional development. The development of

connectivity forms territorial system models, so settlements have naturally established ways of interaction or deliberate remoteness. Settlements in Bulgaria are formed in administrative structures, "municipalities", whose gravitational field from the center to the periphery must exceed 40 kilometers. This essentially reveals the peculiarities of the regional economy and local development. A key category for our municipalities is cash flow in circulation, through which the local economy's capacity is formed. Moreover, the impact of the connectivity market is evident in almost every aspect of modern life, from e-commerce and social media interactions to remote work and international business cooperation. It creates the backbone of the global digital economy, allowing faster communication, collaboration, and access to information. Thus, our study aims to verify the importance of settlement connectivity for the management of regional development and the formation of the regional economy. This need to assess connectivity stems from the need to outline the speed and stability of municipal development in Bulgaria. It is evident that in modern regional studies, more attention is paid to the processes taking place in a given region than to its specific characteristics. They focus primarily on the methods of shaping and transforming regions in various aspects, mainly economic, social (cultural), and political. There is a growing interest in regional studies, especially in the economic development of regions, based on knowledge and services that are generated by the agglomeration effect, or, in other words, by creating a market above the municipal level in which to achieve sustainable regional development with a perspective of reducing migratory mobility and improving the quality of life at the local level. Here, it is appropriate to say that, in addition to connectivity, we will supplement our searches with the Latin word "region". Initially, the concept meant movement in a particular direction or along a direction that defines a specific space (Slaveykov, 2000). Of course, here it is worth emphasizing that over time the scope of the concept of "region" has developed and increasingly reflected how essential relations with people are for a given area, their activities, including the three main factors of production (labor, land, capital), productive activity, and preferred ways of spending free time. The simplest, but also the most general definition of a region can be as a relatively homogeneous area, distinguished from neighboring areas by natural or acquired characteristics or as a spatial arrangement for satisfying human needs, which has its territorial and spatial expression (Tsonkov, N., Petrov, K., Berberova-Valcheva, T. 2023). In this regard, it is essential to note that there are many theories and criteria for distinguishing regions, which means that the number of variables that must be taken into account when developing an ideal definition is infinite. Let us assume that we will not introduce a working definition for deriving connectivity models, because this activity involves many interpretations, and the literature on the topic is replete with explanations of the concept of "region" formulated on the basis of selected assumptions or analyzed indicators. For our study, we can assume that the term is revealed in three meanings: as an object of knowledge, as a tool for research, and as a tool for action. There are many arguments in support of the acceptance and application of the last of the aforementioned meanings of the term "region". In this sense, regions are the basic territorial divisions of any modern country. Under Bulgarian conditions, units at the regional, district, and municipal levels are subject to a centrally implemented regional policy (Tsonkov, N., Petrov, K., 2024).

1. LITERATURE REVIEW

From the perspective of the regional economy, the question of which economic development strategies could help peripheral municipalities achieve stability of regional development (creation of production capacity and localization of traditional business, being able to play the role of financial and service centers or of effective regional transport, also having the opportunity to implement their own research and technology centers) On the other hand, the

economic influence, cultural significance of cities and villages within municipalities and their development potential should be studied in more depth. The relationship between the influence of the spheres of responsibility and specific spheres of action of the administration, economy, and politics over the controlling factors, as well as good governance and self-organization of the public sector at the local level, should also be analyzed in greater detail (Vladeva, R. 2021). In the context of our study, the above-mentioned programmatic approach sets the vision that our municipalities have actually lost their autonomy and rely on the centralized “center-periphery” model to negotiate more of the state’s resources. This is perhaps an essential element of the implemented regional and local policies, but it does not align with the population's demographic potential. In practice, we have witnessed an increase in migrant flows to cities and, outside the country, to other large markets and megacities since 1990. We should not deceive ourselves here, because similar processes exist in the countries of the European Union, where new challenges of a territorial-structural nature and socio-economic development have emerged. For some reasons, the government is beginning to develop at different speeds, with regional imbalances, infrastructure problems, and a deterioration in the demographic structure of the population clearly emerging. To address the issues that have arisen, it is necessary to seek solutions and improvements in territorial management (Petrov, K. 2024). Thus, municipalities in Bulgaria are beginning to experience difficulties related to the quality development of populated areas. The slowdown in the process of quality development also means a reduction in the capacity of regional development of municipalities, and hence a deterioration of the regional economy. This brings to the fore the need to search for new solutions for the development of municipalities that will allow public administration at the local level to leverage the power of new methods, technologies, data, and processes to address challenges in effective and efficient ways. Moreover, a cohort of young people with fresh, diverse perspectives on development processes should be recruited to local government. This new approach to public administration will provide a vision and a path, balancing ambition with an understanding of constraints, to support Bulgarian public administration and enable it to make the most of new ways of working to improve the efficiency and impact of governance for the benefit of citizens. In practice, the public administration process is a path to innovation in the public sector, which helps to clarify the problems that impose a new cross-sectoral priority, which aims to improve the ability of the entire public administration at the municipal level to use innovative methods of work to achieve its goals (Dimov, N.2012). There is increasing recognition worldwide that local municipal governments can take proactive steps to increase innovation capacity - the systematic ability of the public sector to adopt new ways of working. The main problem this public policy addresses is the limited availability of electronic services that go beyond fundamental interactions with citizens and, at the same time, provide reliable monitoring of the condition of public works in municipalities. This public policy for improving public services addresses key life events that require significant public services affecting the lives of citizens and businesses. Each city is required to adopt a strategic document that identifies challenges in municipal public services in the context of e-government service provision and lists the specific measures needed to increase the number of e-services and strengthen civil servants' general digital skills by 2030. In this article, we propose a practical plan for implementation and management at the public services level (Borisov, P., Petrov, K., & Tsonkov, N., 2024).

The public services policy should also strengthen the single electronic point of contact. By offering a dynamic catalogue of electronic public services and a single sign-on solution, the ROeID application on the PDURO platform will simplify interactions among citizens, businesses, and public institutions, facilitating access to and use of digital public services. At the same time, regional policy can also focus on promoting the reward of public-private and

civil society cooperation initiatives to benefit from the experience and knowledge of different sectors and to provide complex and innovative approaches; some of the awards can be aimed at innovative techniques in the partnership between public administration and the associative environment and/or the business environment. Innovative solutions to many current social challenges, such as climate change, growing inequalities, and demographic changes, can be found through a cross-sectoral approach that involves not only stakeholders from central and local public administration but also the non-governmental and business sectors, where innovation is often the engine of development. Of course, here we must look at both cultural and civilizational aspects of the understanding of the nation as a mental construct, as the result of the conscious effort of a given elite to consolidate the community around some fundamental values, taking into account the variability of identity over time and the role of institutional and social influences (Karastoyanov, S., Stoychev, K. 2009). In essence, the economic development of territorial units in Bulgaria is often conflated with economic growth, which is precisely the result of this development. Economic growth is essentially the constant, annual increase in specific economic quantities: production, consumption, investments, foreign trade, etc. This means that it is a quantitative form of economic change. In the individual municipality, economic development is a qualitatively different form of change, since it primarily entails the creation of principles of rational action, the improvement of institutional frameworks, and the adaptation of the achievements of technical and technological progress (Tsonkov, N. 2023). In summary: from the point of view of the existing processes in regional development, and at the municipal level, it is evident that there can be no development without the necessary connectivity between municipalities, because economic development is a process of searching for an optimal distribution of production factors, which is expressed in quantitative changes in terms of, among others, employment, production, income and consumption and, above all, sharing of resources in terms of seeking competition and realization in competitive markets. Therefore, it can be linked to attempts to develop the most effective economic system across two or several municipalities, taking into account technological progress, the qualitative dimension of the social sphere, the demographic potential of the population, and the ability to consume high-quality goods. Ensuring theoretical clarity and conceptual precision requires recognizing the need for the concept of "connectivity" as the foundation of social development. It is a process that accumulates individual progressive changes occurring in separate elements and implies an integral assessment of opportunities for implementing regional policies. Connectivity is also a challenge because social changes within a system can also have negative consequences. Because they are caused by external (exogenous) factors, such as contact with other social groups, their culture, organization, economy, technology, and hierarchy of norms and values. Human attitudes, such as approval, indifference, passivity, disapproval, opposition, and resistance, are critical during periods of change caused by external factors, which, in many Bulgarian municipalities, generate not connectivity but closure and limitation in municipal cooperation.

2. METHODOLOGY FOR ASSESSING THE CONNECTIVITY PROCESS

Methods for strategic research on connectivity are primarily used to inform regional development programming, but they also enable the assessment of local development. In addition, some of these procedures provide qualitative information developed during direct research or working meetings with representatives of the local community. This group of methods has been introduced into the field of research on the development of territorial units through the strategic analysis of the public sector, business, and the economically active population. It is worth remembering this, as the structure of municipal or regional objectives

is significantly more complex. The structure of strategic studies is not complex. They focus primarily on identifying and assessing development factors and their constraints, such as paths, shared interests, opportunities for association, municipalities, different approaches to management, level of development, availability of infrastructure, and others (Angelov K., 2008). One of the most popular procedures is the SWOT analysis. This is a basic, widely used method for multidimensional diagnostics of development, which underpins strategic planning. It allows for the study of the synergies of local territorial systems. It will enable the analysis of both the organization's external and internal environments, including positive and negative factors. The method distinguishes four areas: strengths and weaknesses, opportunities, and threats. The first pair focuses on internal relations, while the second refers to external conditions. Methodologically, this method draws assumptions from the concept of force field analysis. In the SWOT analysis, it is not necessary to identify all factors – only those that have a decisive influence on the organization's future. Due to the variety of factors, sometimes the analysis is carried out at several thematic levels. Another method is Benchmarking, which involves comparing a given unit with others to learn and transfer good practices. It can also serve as a basis for positioning municipalities and settlements within them. Benchmarking also allows for qualitative comparisons. The so-called territorial benchmarking is particularly important, as it compares indicators describing a given territorial unit, such as a municipality or city, with similar units, using a specific set of indicators. Also, of interest is the “Stakeholder Analysis”, which aims to identify the group of entities with the most significant influence on shaping the local development process. The method also analyzes the relationships among individual entities. The analysis takes into account five groups: institutional entities (including public authorities), public and non-public entities, entities and individuals who are direct users, entities that shape public opinion, and entities for which local government is the main factor in development. The last method we will look at is Scenario methods, a group of “discontinuous” methods that involve a “jump” between the present and the future. The scenario should define the desired state and present a series of countermeasures to transform the current state into the desired state. The scenarios can be grouped in different ways, including central and peripheral. This division suggests that the central version is the most likely, while the others are contrasting. Here, it is essential to share that in our case, we will use municipalities of a smaller caliber for analysis, because the way we understand territorial perceptions of the region, districts, and their administrative-territorial projections has changed due to the growing importance of large urban centers, some of which have acquired metropolitan characteristics. The concentration of production factors, the emergence of a specific social class, the emergence of agglomeration areas, and from there the emergence of a new type of social ties and the weakening of the traditional relations have focused attention on the flow of value between the center and its surroundings. The more distant municipalities from large centers are beginning to be perceived as a territorial and functional unit, constituting the sphere of influence of a center - a large city - which is a source of information, collects products, organizes work and consumption and provides services, with the second level being the ability to increase its potential by creating a gravitational field by connecting with another city or cooperating its economy with several other towns (settlements). To test the need for connectivity, we will conduct a comparative analysis of two Bulgarian municipalities located in different parts of the country.

3. RESULTS

Comparative analysis and level of connectivity of Pavlikeni and Tsarevo municipalities

Structurally, the city of Pavlikeni is located in Northern Bulgaria, in the Veliko Tarnovo District, and the city of Tsarevo is located in Southern Bulgaria, in the Burgas District. The

two cities are part of the same-named municipalities. In terms of regional connectivity, the municipality of Pavlikeni (17,600 people) borders Svishtov, the Polski Trambesh municipality, the Sevlievo municipality, the Suhodol municipality, and the Levski municipality to the north. Pavlikeni's location is continental and transit, with good access to national roads, suggesting that it can develop a high degree of connectivity with the municipalities that share borders. Proximity to the city of Svishtov, where the Danube River passes, and to an available ferry to Romania are of great importance. On the other hand, the municipality of Tsarevo (8,481 people) is located in the southeastern part of the country, on a peninsula in the Black Sea (coastline) that borders the municipalities of Primorsko and Malko Tarnovo, as well as the Malak Samokov district (Turkey). Thus, the municipality of Tsarevo has an extremely peripheral, but specialized, coastal location with potential for cross-border cooperation and unloading for the city of Burgas. In my opinion, both municipalities have favorable opportunities, but fundamentally different natural geographic positions. A careful analysis of the two municipalities shows that, with an available settlement network, there are one city (Pavlikeni) and 10 villages (Batola, Bucha, Gabarevo, etc.), as well as one city (Tsarevo) and two villages (Lozenets, Ahtopol). It assumes an ineffective social situation in small towns and settlements with a limited set of basic services, defined as a social minimum that should be accessible to residents (in this case, education, healthcare, and culture). It seems reasonable to conclude that the base of services offered by small towns is an important element of the functional structure. From the perspective of the scope of service users (small municipalities and towns and their immediate surroundings), it is cost-effective because it improves the overall quality of life (Patarchanov, P. 2016). The example of Pavlikeni shows us that we have a classic hierarchical network for an internal municipality. Tsarevo has an extreme model with a minimum of villages, all of which are seaside resorts, which determines the economy. The comparison of indicators revealed a clear order in population changes, which is consistent with scientific publications on functional transformations in small towns. The framework defines Pavlikeni as a settlement with an internal development organization, respectively, Tsarevo as a settlement with specialized tourist and seaside orientation. The comparative analysis of geographical features shows that the settlements are at a relatively low altitude. On the other hand, they are risky due to potential erosion and drought. Moreover, activation of landslides (active and stabilized), fires, and sea erosion. The settlements are steeply terraced. Pavlikeni has a stable environment with few extreme risks. Tsarevo is in a dynamic, beautiful, but potentially dangerous environment that requires specific management (European projects for risks). The reserves in both municipalities are agricultural lands (the main resource), the presence of the Rositsa River, the Alexander Stamboliyski Dam near Pavlikeni, and the Yasna Polyana Dam near Tsarevo. There are no significant minerals in either municipality. Pavlikeni has agro-potential. Tsarevo has a tourist-recreational potential. This is the main difference determined by the resources. Natural landmarks (sea, beaches, steep slopes), forest areas (a significant share), mineral springs (Ahtopol). The two municipalities of Pavlikeni and Tsarevo have negative growth and aging, but they have some stability because they are in better condition than many other rural municipalities. In both municipalities, seasonal demographic pressure is often noticeable, especially when the population increases significantly in the summer. Pavlikeni has a classic upward demographic problem. Tsarevo has a specific seasonal pattern that also brings challenges (pressure on infrastructure). The cultural institutions located in the studied cities are a key element of their functioning and vary in importance across cities. For some settlements, they serve as sources of activity or recreation for residents and the local community. In contrast, for others, they complement the tourist function, offering more than just environmental benefits (Vladeva, R., Vladev, I., 2019). In general, the leading economic development sectors, in chronological order, are Agriculture (viticulture, fruit growing), the processing industry (food, textiles),

trade, tourism, and hospitality (dominant in Tsarevo). Good transport connections with large centers, mainly related to trade and services, as well as tourism. The direction to the regional cities of Veliko Tarnovo and Burgas determines connectivity. In general, Pavlikeni is an agro-industrial municipality with a diversified economy. Tsarevo is a monofunctional tourist municipality with high seasonality. This determines all aspects of development. The socio-economic processes that affected small towns at the turn of the 20th and 21st centuries transformed their functional structure and the conditions for their development (Simeonov, D., Simeonova, D., 2021). The economic situation, especially after we enter the European Union, has changed, and this is especially important given the connection to rural areas. From the point of view of competitiveness, the economic aspect seems key, as it is based on small towns' ability to gain advantages in the benefits they provide to residents, investors, and the immediate and distant surroundings. These benefits are evident in areas related to the economic aspect, such as entrepreneurship, infrastructure, employment, tourism, and economic conditions. All these segments identified in small towns, across a diverse range of accessibility levels, affect economic and overall competitiveness. As long as they are available. In terms of. Infrastructure for water supply and sanitation in the city and parts of the villages in both municipalities, and what to wish for. The critical infrastructure in the municipalities of Tsarevo and Pavlikeni is also complex, but in need of modernization. In this direction, the priority for Pavlikeni is the modernization of industrial zones, roads, and rural infrastructure. The priority for Tsarevo is the construction of the Burgas-Malko Tarnovo expressway, new treatment plants, and a new waste landfill to improve environmental infrastructure (treatment, waste) and transport accessibility. What are the prospects for development in the two municipalities? First of all, diversification in agribusiness (high processing), development of green tourism, and use of funds for rural areas (from the EU). Sustainable (ecological) tourism, transition from seasonal to year-round model (spa, cultural, congress tourism), nature conservation (Kabakchieva, D. Vasileva, V. 2023). Pavlikeni's integration into the EU is through a special program for rural areas and regional economies. For Tsarevo, through programs for sustainable tourism, nature conservation, and coastal regions. It is good for the municipality of Pavlikeni to be more active in developing the regional economy of the Veliko Tarnovo region to maintain a balance among industry, agriculture, and cultural tourism. Pavlikeni can integrate as an agro-center. At the same time, the municipality of Tsarevo offers an alternative niche, ecological tourism, which complements the regional profile of the Burgas region, which is trying to develop industry, energy, and mass tourism. Both municipalities can occupy niches and positions within their regions' economies. Thus, the municipality of Pavlikeni is a typical agro-industrial municipality for Northern Bulgaria with a stable but aging economy. Its integration into the EU is carried out through policies for regional development and rural areas, aimed at modernization, diversification, and population retention. Tsarevo is a typical monofunctional tourist municipality on the Southern Black Sea coast, with high natural potential but major environmental and seasonal challenges. Its integration into the EU is through policies for sustainable development, nature conservation, and sustainable tourism, aimed at overcoming seasonality and preserving the natural assets.

CONCLUSION

The processes of regional development and connectivity seem to be in harmony with the natural environment. Still, today's approach to regions considers natural resource potential an essential condition for shaping development, especially for small and medium-sized municipalities, whose location determines their importance. Currently, connectivity is a significant factor in development and competitiveness, as it integrates with socio-economic

elements in a way that their development depends on access to individual points of the region, especially at what cost. This is the reason why several regions and municipalities fail to define sustainable management of natural resources. From the perspective of small municipalities' competitiveness, this aspect is equally important. However, as indicated, actions aimed at maintaining natural values can be considered barriers to development that hinder the prosperity of small towns. The concepts of sustainable development and environmental protection are present at every administrative level. Thus, for the mentioned municipalities, Pavlikeni and Tsarevo, it is evident that they can develop a regional economy and concentrate significant demographic potential, but, in terms of membership in the European Union, the exact opposite occurs. Thus, this segment should be treated as an aspect of the competitiveness and development of small towns. Still, connectivity is not defined by the public sector, and business has its own selfish motives. Therefore, the proposed indicators for assessing the level of connectivity in regional development relate, on the one hand, to regional values present in small urban centers, and on the other, to the technical infrastructure and environmental protection infrastructure, which affects the state and load on the natural environment, which is a task of increased difficulty for Bulgarian municipalities; they do not bring out infrastructure as an absolute municipal priority.

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BUSINESS EXPECTATIONS REGARDING THE INTRODUCTION OF THE EURO IN BULGARIA – DIFFERENCES BY FIRM SIZE

ABSTRACT

This article uses data from the 2025 Business Barometer survey, covering 800 enterprises of various scales, and examines Bulgarian businesses' attitudes toward adopting the euro, focusing on differences by company size. The study situates business perceptions within Bulgaria's historical, political, and economic context of euro area integration and it compares international experiences in Eastern Europe, noting both successes and challenges, with the ongoing domestic debate. Results show apparent divisions among the researched enterprises: larger and export-oriented firms generally view the euro as an opportunity, whereas micro and small enterprises perceive risks, especially regarding adaptation costs and inflation. Key challenges for Bulgarian businesses, such as administrative burdens, labor shortages, and unfair competition, are mostly unrelated to the currency change. The conclusions are that successful euro adoption will rely not only on macroeconomic readiness but also on clear communication, consistent institutions, and targeted support for vulnerable firms to ensure a smooth transition and maximize benefits for the domestic economy.

KEYWORDS: Euro adoption; business expectations; monetary integration;

Eastern Europe; adaptation costs

JEL: E52, E58, F36, F45, L25

INTRODUCTION

Among the leading economic and political topics of the past decade has been the introduction of the euro as the official currency in Bulgaria. The process is part of the country's commitment to step by step integration into the euro area, a goal outlined as early as its EU accession in 2007. Much less research has been conducted into how the different economic actors in the country perceive this change, while the strategic, fiscal, and legal prerequisites for adopting the single currency have been the subject of in-depth analyses and political debates. In this context, the attitudes of businesses acquire particular significance – a key driver of economic development and a direct participant in the adaptation processes accompanying the currency transformation.

The main objective of the present article is to examine the attitudes towards the introduction of the euro in Bulgaria according to business size, undertaking a comparative analysis between micro, small, medium, and large enterprises. The likely reasons for differences in attitudes among enterprises of different scales are presented: access to resources, administrative capacity, international activity, ability to adopt regulatory changes, and others. Micro, small, and medium-sized firms are often regarded as more vulnerable both to

regulatory and market changes; on the other hand, large firms possess broader opportunities for adaptation, strategic planning, and influence over the economic environment. It is therefore essential to trace both the differences and potential similarities in their perceptions of the benefits and risks of euro area integration.

The empirical part of the article is based on information from the research project *Business Barometer 2025*. It relies on a sample of 800 enterprises, with micro, small, medium-sized, and large enterprises each represented by 200 units. Enterprises from all sectors and industries are included. The respondents are executives from these enterprises – chief executive officers and their deputies, managers, deputy managers, chief accountants, etc. Fieldwork was conducted in January – February 2025. The methods of data collection were structured online and offline surveys with a questionnaire, which included the following blocks of substantive questions: assessments of the current state of the firms; evaluations of the business environment in 2024; comparison of the state of the firms in 2024 relative to 2023; expectations for 2025; key problems faced by firms; topical issues (the impact of the country's accession to the Schengen area, the introduction of the euro, the war in Ukraine, etc.).

1. THE HISTORY OF THE EMERGENCE OF THE EURO

The emergence of the euro is the result of a long-standing process of economic and political integration within the European Union (EU), whose primary objective has been to create a stable, competitive, and united European economy. As a result, the project of introducing a common currency dates back to the 1960s, in the context of efforts to strengthen economic cooperation among the member states of the then European Economic Community (EEC). The idea of an economic and monetary union was launched at the Hague Summit in 1969. In 1970, Pierre Werner's report proposed a concrete plan for the gradual introduction of a single currency. The realization of this project was delayed by the political and economic upheavals of the 1970s and 1980s – including oil crises, inflation, and divergences in economic policies.

In 1986, a real breakthrough came with the signing of the Single European Act, followed by the Maastricht Treaty in 1992, which created the European Union and laid the legal foundations for the Economic and Monetary Union (EMU). The Maastricht Treaty established a clear timetable and criteria for the introduction of the euro – known as the *Maastricht criteria*:

1. Price stability – annual inflation must not exceed by more than 1.5 percentage points the average inflation rate of the three EU member states with the lowest inflation;
 2. Sound public finances – a budget deficit of less than 3% of GDP and government debt below 60% of GDP (or convincingly declining towards this level);
 3. Exchange rate stability – participation in the Exchange Rate Mechanism II (ERM II) for at least two years without significant deviations from the fixed rate against the euro and without devaluation of the national currency;
 4. Convergence of interest rates – long-term interest rates must not be more than 2 percentage points above the average of the three countries with the lowest inflation.
- These criteria were set to avoid introducing the euro in economies with unstable finances, high inflation, or weak currencies, which could jeopardize the stability of the monetary union.

In addition to the economic indicators, the state must also align its legislation with the Treaty on the EU and the Statute of the European Central Bank (ECB) (the independence of the central bank, rules for monetary policy, etc.).

The euro was introduced as a non-cash currency for eleven EU member states on 1st of January 1999, including France, Germany, Spain, Italy, and the Netherlands. On 1 January 2002, euro banknotes and coins entered into physical circulation, replacing national currencies in daily transactions. With this act, Europe, for the first time since antiquity, introduced a supranational currency used by multiple independent states. The European Central Bank (ECB), established in 1998, assumed the central role in managing monetary policy within the euro area.

During the years, new countries in the euro area gradually adopted the currency – by 2024, it included 20 states. Each new candidate country goes through a special coordination mechanism known as the Exchange Rate Mechanism II (ERM II), which guarantees exchange rate stability before transitioning to the euro. Representing one of the last steps prior to the official adoption of the euro, Bulgaria joined ERM II in July 2020.

The history of the euro is a reflection of profound changes in European economic thought, but not only a chronology of institutional actions. The euro symbolizes the efforts of the member states to balance national sovereignty with the need for standard solutions to global challenges. Although facing multiple crises – such as the euro area debt crisis after 2009 – the euro remains a central achievement of European integration and a subject of constant interest to academia, business, and society.

2. ECONOMIC ARGUMENTS “FOR” AND “AGAINST” THE ADOPTION OF THE EURO FROM A BUSINESS PERSPECTIVE

The adoption of the euro in Bulgaria is a strategic challenge for businesses and represents a macroeconomic and political issue. Different economic sectors and enterprises perceive the introduction of the single currency through the prism of specific benefits and risks that affect both their operational activity and long-term planning.

Another significant positive effect concerns financing conditions – the adoption of the euro may lower interest rates and improve access to capital, especially for small and medium-sized enterprises (SMEs), which are traditionally more dependent on bank lending. Furthermore, being part of the euro area is perceived as a signal of macroeconomic stability, which may enhance the confidence of foreign investors and attract new ones.

Among the most frequently cited economic arguments “for” the euro is the elimination of currency risk and transaction costs when trading with euro area countries. This is particularly significant for export-oriented firms that frequently conclude contracts in euros. The stability of the single currency and the removal of currency exchange costs also help lower transaction costs, improve price transparency, and enhance the competitiveness of Bulgarian businesses in the EU internal market.

On the other hand, businesses also point out several arguments “against” the transition to the euro, or concerns associated with it. Among the leading ones are expectations of rising prices, which are for instability, pessimism, and fear. This is relevant not only for goods and services with inelastic demand but also for the risk of short-term inflation, observed in other newly acceding countries. All this may adversely affect labor costs and consumption, particularly for small firms with limited resources and profit margins.

Some enterprises also express concerns that in the event of external shocks Bulgaria would lose the ability to conduct an independent monetary policy, thus limiting its capacity to respond with instruments such as devaluation or interest rate control. This is seen as

particularly critical for sectors sensitive to the global competitive environment (e.g. agriculture, light industry, energy).

Finally, for part of the business sector – especially smaller and family-owned firms – the main challenges are linked not so much to the economic essence of the currency change as to the exceeding operational costs of adaptation: new software implementation, accounting systems, contractual terms, and staff training.

In summary, business attitudes towards adopting the euro are shaped at the intersection of expected economic benefits and real or perceived risks. These attitudes vary significantly depending on the size, sector, and degree of international engagement of enterprises – a topic that will be empirically analyzed in the subsequent sections of the study.

3. SUCCESSFUL AND UNSUCCESSFUL PRACTICES IN THE INTRODUCTION OF THE EURO BY EASTERN EUROPEAN COUNTRIES

The process of joining the euro area in Central and Eastern Europe has been marked by diverse approaches, outcomes, and lessons, which can be grouped into successful and unsuccessful practices. Economic indicators are of substantial importance, but not only. It is often political strategy, public communication, and business orientation towards change that determine the real success of the currency transformation.

3.1. SUCCESSFUL PRACTICES

Slovenia is one of the most frequently cited success stories. It was the first Eastern European state to adopt the euro in 2007. The two key elements of its transition were timely fiscal consolidation and maintaining low inflation. Also, very important was the active dialogue between the government, business, and civil society. Slovenian institutions conducted a large-scale information campaign that prepared the population and enterprises for the technical and economic aspects of the transition. This was essential for the success of euro adoption.

Slovakia (2009) is often cited as an example of an effective transition. It maintained fiscal discipline and macroeconomic stability while creating a broad public consensus regarding the benefits of the euro. Clear regulatory guidelines for business were adopted in the country, the currency conversion was carried out transparently, and dual price labelling (in the national currency and in euros) helped to limit price speculation. The same practice was implemented in Bulgaria starting in early August 2025.

Another successful example is the three Baltic states – Estonia (2011), Latvia (2014), and Lithuania (2015) – which demonstrated other important practices. Despite initial public reservations, particularly in Latvia, their governments emphasized consistency, institutional stability, and control over inflation. The focus was placed on the technical preparation of businesses, with guidelines for accounting software, product labelling, and contract conversion. The Baltic model shows that even in countries with limited resource capacity, it is possible to introduce the euro successfully, provided there is political will, effective coordination, and good communication.

3.2. UNSUCCESSFUL OR PROBLEMATIC PRACTICES

Despite the overall success of the euro's introduction in Central and Eastern Europe, there have also been problematic aspects. The most frequently cited challenge has been insufficient communication with the people, leading to doubts, distrust, speculation, and discontent. For example, before Lithuania adopted the euro in 2015, public support was below 30%, primarily due to fears of rising prices. Although the actual effect on inflation proved to be limited, the weak explanatory campaign led to lasting distrust in the first months after the transition.

A similar situation was observed in Latvia, where the lack of transparent governance and strong anti-elite sentiment contributed to low levels of public support. Many small enterprises expressed dissatisfaction with the costs of the transition, including changes to cash registers, accounting software, and contractual documentation. All had been underestimated by the authorities. This highlighted the need for targeted state support for small businesses during the currency transformation.

In Croatia, which adopted the euro in 2023, the process also encountered challenges. Although technical preparation was relatively good, some retail chains and firms were accused of unjustified price rounding, which led to a sharp deterioration in consumer attitudes. This demonstrated that market and price control must be strict and effective in the period before and after the introduction of the euro.

Comparative analysis shows that successful practices in euro adoption are characterized by three main factors: institutional consistency, active and timely communication, and support for businesses and citizens during the adaptation period. Conversely, unsuccessful practices most often arise from underestimating the social and communication aspects of the process.

The lessons from the experience of Eastern European countries are of crucial importance for Bulgaria. If the country wishes to achieve a smooth and publicly supported transition to the euro, it must apply proven practical approaches – with a focus on transparency, awareness, and real support for businesses, especially for micro and small enterprises.

4. THE EVOLUTION OF THE DEBATE ON THE EURO IN BULGARIA

The debate over Bulgaria's adoption of the euro dates back to the country's accession to the European Union in 2007, when it undertook the legal obligation to join the euro area upon fulfilling the Maastricht criteria. Despite this commitment, the topic of the euro remained peripheral in the public sphere during the first decade after EU entry. Until around 2018, it was present mainly within expert and governmental circles, as part of the broader discussion on European integration, fiscal discipline, and macroeconomic stability.

During this early period, institutions maintained a relatively consistent stance in support of joining the euro area. The Bulgarian National Bank (BNB) and the Ministry of Finance repeatedly emphasized the advantages of the fixed exchange rate to the euro and the stability arising from Bulgaria's currency board, introduced in 1997. This currency regime was regarded as a bridge to a smooth transition to the single currency. At the same time, public interest in the topic remained low, and the lack of a broad information campaign resulted in limited understanding among the population of the potential consequences of euro area integration.

Gradually, as Bulgaria's progress towards participation in ERM II increased, interest in the topic grew. In July 2020, Bulgaria officially joined ERM II and the banking union – key steps towards the introduction of the euro. This event placed the issue in the spotlight of the media,

experts, and political parties. It was at this point that the debate began to transform from predominantly technocratic to broadly public and politicized.

In the years following 2020, a growing polarization in the assessments of euro adoption has been observed. On the one hand, representatives of government, the central bank, business associations, and international partners highlight the benefits of euro area membership – cheaper financing, elimination of currency risk, integration with European financial markets, and enhanced investor confidence. On the other hand, numerous politicians, economists, and public figures question the country's readiness, possible inflationary effects, the loss of monetary sovereignty, and the risk of declining purchasing power of citizens.

The skeptical line of debate intensified particularly after 2022, when, amid high inflation across Europe and domestic political instability in Bulgaria, voices emerged calling for the postponement of euro area integration. The use of the euro issues in populist political discourse became increasingly common, with claims of mass price increases, social injustice, and “external pressure” to join. In some cases, deliberate dissemination of disinformation and fears was observed, contributing to declining public support.

Surveys based on public opinion during this period recorded significant fluctuations: while in 2020 around 50% of Bulgarians supported the introduction of the euro, by 2023–2024 support had declined to around 30–35%, with a growing share of neutral and negatively inclined respondents. The reasons for this included the lack of an effective communication strategy, weak trust in institutions, and accumulated fatigue and uncertainty among the population due to the recent years' socio-economic crises.

The business community remains divided. A large proportion of export-oriented and medium-to-large firms support the adoption of the euro. In contrast, micro and small firms express concerns about transition costs, inflationary pressures, and administrative burdens. In this context, the debate over the euro in Bulgaria has taken on a multilayered character, in which economic arguments often intertwine with political and psychological factors.

In 2025, the debate remains increasingly intense, with entry into the final phase of preparations for the euro necessitating genuine public information, institutional consistency, and the engagement of all stakeholders. The cases of other Eastern European countries show that a successful transition requires not only economic readiness but also societal maturity and stable communication aimed at reducing fear and speculation. In this respect, the debate on the euro in Bulgaria reflects both the country's economic ambitions and the challenges to its democratic maturity.

5. CONCEPTIONS OF THE IMPACT OF THE EURO AS BULGARIA'S NEW NATIONAL CURRENCY

5.1. THE DESIGN AND METHODOLOGY OF THE BUSINESS BAROMETER PROJECT

Since the article is based on information from the *Business Barometer 2025* research project, it is helpful to briefly discuss the project's design and methodology.

The long-term *Business Barometer* research project dates back to 1999, when the pilot wave of the survey was conducted at the then Institute for Economic Analyses, Expertise, and Forecasts at the University of National and World Economy (UNWE), headed by Prof. V. Manov. The program and instruments of the project were developed and applied by a group of researchers from the Institute for Economic Analyses, Expertise, and Forecasts, led by Prof. S. Jelev and Senior Research Associate D. Pushkarov. The overall concept of the Business Barometer can be described as follows:

Once annually, at the end of the evaluated year (e.g., 2024), usually in January and February of the following year (2025), a sample of business executives – representatives of Bulgarian

firms – is surveyed on various key indicators for the firms and the business environment, such as:

- Their assessments of the state of their own firms regarding production and technological equipment, quality of the workforce, capacity to secure sources of financing, labor discipline, and numerous other indicators with reference to the evaluated year (e.g., 2024);
- Their assessments of the business environment – prices, markets, access to financing, availability of workforce, administrative and tax burden, etc., with reference to the evaluated year (e.g., 2024);
- Comparative evaluation of all the above indicators for the current year relative to the previous year (2024 compared with 2023);
- Expectations for the subsequent year regarding these parameters (2025).

In each wave, confidence in official statistical data is measured, concerning income levels, inflation, GDP growth, and other macroeconomic indicators. Likewise, in every wave of the project, the main obstacles faced by businesses, as expressed by their representatives, are recorded.

In different waves, depending on the public agenda, a series of topical questions are also asked. For the 2024 wave, they related to the impact of the adoption of the euro; attitudes towards Bulgaria's accession to the Schengen area; how firms were affected by the inability to form a stable, regular government in recent years; the impact of the Recovery and Resilience Plan; the impact of the war in Ukraine, etc.

The Business Barometer was conducted regularly from 2000 to 2012, with samples of about 800 to 1000 firms across all sectors and branches of the economy. Over the years, improvements were made to its instruments, though these did not substantially affect the comparability of data across waves. Initially, the methods of data collection were written and oral surveys. In recent years, online surveys have also been added.

The Business Barometer demonstrated exceptional sensitivity to different “atmospheric pressures” – economic conjunctures during the period, including stronger growth, moderate growth, and recession.

For various reasons, the project was discontinued. It was restored in 2023 as a long-term project of the Research Fund of the University of National and World Economy. After revising its instruments in 2024, fieldwork was conducted in January and February 2025 to evaluate the 2024 results. In this wave, the sample was disproportionately stratified and included 800 units: 200 micro, 200 small, 200 medium, and 200 large firms. The methods of data collection were online and offline surveys.

5.2. ASSESSMENTS OF THE ADOPTION OF THE EURO IN BULGARIA

Table 1 presents data on the impact of adopting the euro as the new national currency on the entire population of firms operating in the Bulgarian market. Business executives, representing the firms in the sample, were asked to respond to the question: *How will it affect your firm if the euro replaces the lev in Bulgaria?*

Table 1. How will it affect your firm if the euro replaces the lev in Bulgaria?

Effect on the firm	Share of firms (%)
Entirely positive	9.8
Mostly positive	15.9
Will not affect at all	27.0
Mostly negative	18.1
Entirely negative	12.4
Cannot assess	16.9
Total	100.0

Source: Empirical study "Business Barometer 2025", academic project funded by the Scientific Research Fund of the UNWE, Sofia

What conclusions can be drawn from these data?

- **Variety of attitudes.** The opinions of Bulgarian firms are divided, with no clearly expressed majority in any category. The largest share (27%) of firms believe that replacing the lev with the euro will not affect their activities, indicating considerable neutrality or a lack of clear expectation for change.
- **Slight predominance of negative expectations.** The share of firms expecting entirely or partially negative effects is 30.5%. This is slightly higher than the share of firms with entirely or partially positive expectations, which amounts to 25.7%.
- **Uncertainty among firms.** A significant proportion (16.9%) of firms cannot assess how the euro will affect their activities. This may be due to insufficient information, uncertainty about the economic consequences, or sectoral differences in their operations.
- **Limited enthusiasm for positive effects.** Only 9.8% of firms expect entirely positive effects, the lowest share among categories with a clearly expressed position. This suggests that few firms perceive substantial advantages from adopting the euro, such as easier trade or reduced currency costs.
- **Possible challenges.** Drawing on the experience of Eastern European countries discussed earlier, the high percentage of firms with negative expectations (30.5%) may reflect concerns about rising costs, price pressures, or adaptation difficulties during the transition to the euro, particularly for micro and small enterprises.

5.3. ATTITUDES TOWARDS THE EURO

In Table 2, expectations regarding the impact of adopting the euro are presented by firm size, measured by the number of employees. Of course, other indicators of firm size, such as revenue or turnover, could be used. However, experience from previous editions of the *Business Barometer* shows that a substantial share of firms refuse to provide such data for various reasons. Another problem is the reporting of unreliable data, though it is difficult to

assess the exact share of such firms. These two problems have led the authors of the *Business Barometer* to use a more limited approach.

Table 2. Expectations of the Impact of the Adoption of the Euro by Firm Size

Firm Size	Entirely Positive	Mostly Positive	Will Not Affect All	at Mostly Negative	Entirely Negative	Total %
Micro	8.8	15.8	26.9	28.7	19.9	100.0
Small	11.3	15.5	36.3	25.6	11.3	100.0
Medium	12.7	21.2	35.8	18.8	11.5	100.0
Large	14.3	24.2	31.1	18.0	12.4	100.0
Total %	11.7	19.1	32.5	22.9	13.8	100.0

Source: Empirical study “Business Barometer 2025”, academic project funded by the Scientific Research Fund of the UNWE, Sofia

Table 2 shows a two-dimensional distribution by the variables: expectation of the impact of adopting the euro as the new national currency (survey question: *How will it affect your firm if the euro replaces the lev in our country?*) and firm size (survey question: *Approximately how many people are employed on permanent contracts in your firm?*). Firms that answered *cannot decide* have been excluded.

What does the table show?

- Opinions on the impact of euro adoption are divided: 30.8% expect entirely or mostly positive effects; 36.7% expect entirely or mostly adverse effects (last row of the table).
- The prevailing view is that the adoption of the euro “*will not affect at all*” their business. This is held by one-third of firm managers (32.5%).
- More than one third ($22.9 + 13.8 = 36.7\%$) of all managers believe that the adoption of the euro will have a negative effect – entirely or partially – on their firms’ business.
- The strongest negative expectations are expressed by managers of micro firms – almost half of them share such expectations ($28.7 + 19.9 = 48.6\%$); they are weaker among managers of small firms ($25.6 + 11.3 = 36.9\%$); still weaker among medium firms ($18.8 + 11.5 = 30.3\%$) and large firms ($18.0 + 12.4 = 30.4\%$). In other words, as firm size increases, negative expectations decrease.
- Conversely, as firm size increases, positive expectations of the impact of euro adoption also increase: positive expectations are shared by 24.6% of micro firms, 26.8% of small firms, 33.9% of medium firms, and 38.5% of large firms.

The Kruskal–Wallis test showed a statistically significant difference in the assessment of the impact of euro adoption across different firm-size groups (whether firm size is a statistically significant variable in expectations about the euro’s impact). The Mann–Whitney U test, which compares pairs of firm sizes with statistically significant differences in expectations of the euro’s impact, established that:

1. Micro firms differ significantly from small, medium, and large firms;
2. However, small, medium, and large firms do not differ significantly among themselves with respect to expectations of the impact of euro adoption in Bulgaria.

With some “rounding”, several conclusions can be drawn:

1. The larger the firm, the more positive its attitude towards the euro.
2. Micro firms are the most concerned about the adoption of the euro.
3. Large firms see the euro more as an opportunity than as a threat.
4. The most widespread reaction is “*It will not affect at all.*”

Table 3. Which Three or Four Problems Hinder Your Firm's Business the Most? (Up to 4 answers)

Problems	Micro	Small	Medium	Large	Total %
Unfair competition	42.5	40.5	28.0	13.5	31.1
Administrative and bureaucratic barriers	38.5	47.0	35.0	35.5	39.0
Social security burden	36.5	23.0	16.5	17.0	23.3
Tax burden	31.0	23.5	18.5	17.5	22.6
Difficulty in finding skilled labor	31.0	44.0	58.5	61.0	48.6
Increased energy prices	27.5	21.5	26.5	34.0	27.4
Corruption	21.5	17.0	19.5	17.5	18.9
Legislative shortcomings	21.0	30.0	24.5	21.5	24.3
Growing power of retail chains	17.5	13.5	11.5	10.0	13.1
Unfavorable macroeconomic environment	15.5	24.0	28.0	21.0	22.1
Competition from foreign producers	13.5	15.0	11.0	21.5	15.3
Rigged public procurement	11.5	12.5	12.0	11.0	11.8
Difficult access to credit and other financial sources	7.5	9.0	5.0	5.0	6.6
Other	2.0	1.0	2.0	2.0	1.8

Source: Empirical study "Business Barometer 2025", academic project funded by the Scientific Research Fund of the UNWE, Sofia

Let us first outline which of these problems are not at all related, only weakly related, or substantially related to the adoption of the euro.

Table 4. To What Extent Are the Problems Related to the Adoption of the Euro

Problems	Not related	Related
Unfair competition	*	
Administrative and bureaucratic barriers	*	
Social security burden	*	
Tax burden	*	
Difficulty in finding skilled labor	*	
Increased energy prices	*	
Corruption	*	
Legislative shortcomings	*	
Growing power of retail chains	*	
Unfavorable macroeconomic environment		*
Competition from foreign producers	*	
Rigged public procurement	*	
Difficult access to credit and other financial sources		*
Other		

Source: Empirical study "Business Barometer 2025", academic project funded by the Scientific Research Fund of the UNWE, Sofia

From the data in the table, two things are clear:

- Of the 13 major problems, the solution to 11 is not related to the adoption of the euro, and only 2 are related: (a) improving the macroeconomic environment (the assumption being that the euro area provides greater stability and predictability); (b) better opportunities for access to credit and other financial sources.

- These two problems, which are related to euro adoption, are not among the significant problems indicated by Bulgarian businesses. Improving the macroeconomic environment is ranked 8th, while improving access to credit is ranked 13th.

The main conclusion is that the issue of euro adoption has almost no direct connection with the main problems faced by businesses. Most of the problems are related to the shortage of skilled labor, administrative and bureaucratic barriers, energy prices, unfair competition, legislative shortcomings, and the social security burden. These are systemic and structural barriers that a currency change will not solve. Hence, the fact that over 32.5% of businesses do not expect any effect from the euro, while micro firms are even more negatively inclined, because their real problems remain.

One reasonable question to raise is how negative expectations regarding euro adoption among the micro firms will affect their businesses. Will it double or triple the negative effect, or will there be no difference?

CONCLUSION

The study confirms that business expectations regarding the adoption of the euro in Bulgaria are heterogeneous and strongly conditioned by firm size. Micro enterprises emerge as the most skeptical group, with nearly half anticipating negative consequences, while large firms display comparatively more optimism, perceiving the euro primarily as a tool for stability, competitiveness, and financial integration. The empirical analysis reveals that the majority of structural barriers confronting Bulgarian businesses – labor market constraints, bureaucratic burdens, and market imperfections – are not directly connected to the currency transition, which explains the widespread neutrality and limited enthusiasm recorded among respondents.

Lessons from the experience of other Eastern European states underline the decisive role of political leadership, transparent communication, and targeted support for small businesses in ensuring a smooth transition. For Bulgaria, the challenge is therefore dual: to consolidate macroeconomic and institutional readiness, while simultaneously addressing the informational gaps and apprehensions of firms most exposed to adaptation costs. Achieving a broad-based consensus will require a coordinated strategy that balances economic rationality with public trust. Ultimately, the euro's successful introduction in Bulgaria will depend not merely on meeting formal convergence criteria, but on the ability of institutions to engage business and society in a credible and inclusive process of integration.

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THE ROLE OF BULGARIAN FARMERS IN PROMOTING CLIMATE-RESILIENT AGRICULTURAL PRACTICES

ABSTRACT

Climate change is increasingly affecting Bulgarian agriculture through rising temperatures, irregular rainfall, droughts, and more frequent extreme events. This study explores how Bulgarian farmers perceive these changes and what climate-resilient practices they adopt. Using surveys, focus groups, and interviews with 50 farmers across grain, vegetable, livestock, vineyard, rose, and mixed farms, the research identifies clear sector-specific impacts and responses. Grain producers face high drought risk; vegetable growers struggle with water scarcity and pests; livestock farmers experience declining forage quality; vineyards and rose growers report significant phenological disruptions. Farmers employ a mix of technological and agroecological adaptations, yet financial constraints, insufficient training, and misaligned policy support limit adoption. The findings highlight the need for targeted, locally relevant measures and stronger collaboration among farmers, scientists, advisory services, and policymakers. Building climate resilience in Bulgarian agriculture requires accessible funding, practical knowledge exchange, and long-term institutional commitment.

KEYWORDS: Climate-resilience, Sustainable development, Farm management

JEL: Q10, Q18, O11, R14

INTRODUCTION

1. CLIMATE CHANGE AS A CRITICAL CHALLENGE FOR BULGARIAN AGRICULTURE.

Climate change is increasingly acknowledged as one of the most substantial challenges confronting Bulgarian agriculture. Rising temperatures, altered precipitation regimes, and the increasing frequency of extreme weather events threaten crop productivity, rural livelihoods, and regional socio-economic stability (Georgieva, Kazandjiev, Bozhanova et al., 2022; Nikolova, Matev,

& Bozhkov, 2024). Owing to Bulgaria's diverse geography and topography, the country features highly heterogeneous agro-climatic zones, making the development of targeted climate-resilience strategies essential (SpringerLink, 2023). Given agriculture's central role in rural development, understanding how Bulgarian farmers adapt-or fail to adapt-to climate-induced risks is crucial for evidence-based policymaking and long-term sustainability.

2. EVIDENCE OF CLIMATE SHIFTS AND THEIR AGRICULTURAL IMPACTS.

A substantial body of research documents clear climatic shifts across Bulgaria. Georgieva et al. (2022) analyzed agrometeorological data from 1986 to 2015. They found a consistent upward trend in mean temperatures, reaching approximately 2 °C in some months, alongside more frequent and prolonged dry periods, despite modest increases in annual precipitation. These climatic changes heighten drought risk during critical stages of crop growth and place additional stress on generative processes such as pollination (Georgieva et al., 2022).

Long-term modelling supports these observations. Using general circulation models (GCMs), Alexandrov (1999) projected significant temperature increases under doubled CO₂ scenarios. Although agro-climatic potential may improve in some regions, yields of major crops, including winter wheat and maize, would decline without adaptation. The study identified several effective adaptation measures, including modified planting dates, climate-tolerant varieties, and irrigation improvements (Alexandrov, 1999). More recent analyses by Nikolova, Matev, and Bozhkov (2024) further document an upsurge in hailstorms, heatwaves, and droughts, based on both instrumental climate data and farmer surveys. These extreme events diminish yield stability and disproportionately affect rain-fed agricultural systems.

42. FARMERS' CENTRAL ROLE IN CLIMATE-RESILIENT AGRICULTURE.

Farmers occupy a pivotal position in advancing climate-resilient agricultural systems. They act simultaneously as resource managers, strategic decision-makers, and generators of experiential knowledge that shapes adaptation at the farm level (Rezear, Borisov, Radev, and Osmani, 2019). As the frequency and intensity of climate-related stressors—such as droughts, floods, heatwaves, and pest outbreaks—increase, farmers' adaptive capacity becomes indispensable for maintaining agricultural production (FAO, 2021; IPCC, 2022). International research underscores that climate-resilient agriculture cannot be achieved solely through technological innovations or top-down policy directives. Instead, successful adaptation requires farmers' active engagement, local expertise, and context-specific decision-making at all stages of the adaptation process (FAO, 2021; IPCC, 2022).

43. SOCIO-ECONOMIC VULNERABILITIES AND EMERGING AGRONOMIC RISKS.

Climate change also creates significant socio-economic vulnerabilities within Bulgarian agriculture. A rural resilience assessment highlights key threats, including declining productivity, soil degradation, water scarcity, and increased pest pressure—all of which undermine farm incomes, particularly in regions heavily dependent on agriculture (Stoyanova, 2022). Phenological changes are already observable. Stoyanova (2022) notes earlier flowering, altered growth cycles, and shifts in plant developmental timing. She argues that changes in air temperature, solar radiation, and precipitation exert more direct influence on yield potential than previously recognized, underscoring the urgent need for advanced agro-technological innovations capable of enhancing production stability under increasing climate variability.

RESEARCH METHODOLOGY

The goal of this article is to examine the role of Bulgarian farmers in the adoption, implementation, and development of climate-resilient agricultural practices.

This study employs a mixed-methods approach to examine how Bulgarian farmers perceive climate change, which climate-resilient practices they adopt, and which barriers limit wider implementation (Borisova, 2024). Because the objective is to capture both the breadth of

farmer experiences and the depth of their contextual knowledge, the study combines structured survey elements with open-ended qualitative discussions.

SAMPLING STRATEGY AND PARTICIPANTS

A stratified purposive sampling strategy was applied to ensure representation across different agricultural sectors, farm sizes, and production systems. A total of 50 farmers participated in the study. The sample included producers from the following categories:

- Grain farming (n = 12)
- Vegetable production (n = 10)
- Livestock farming (n = 9)
- Viticulture (n = 8)
- Rose and essential-oil crops (n = 6)
- Mixed and diversified farms (n = 5)

Among the 50 participants, 11 farms were organically certified, and 36 were small-scale family farms, while 14 were medium-sized commercial operations. The participants represented six regions of Bulgaria: Plovdiv, Stara Zagora, Veliko Tarnovo, Haskovo, Burgas, and Montana.

RECRUITMENT AND ETHICAL CONSIDERATIONS

Farmers were recruited through regional agricultural extension services, producer associations, and local advisory centers. All participants received information about the study's objectives, the voluntary nature of participation, and data confidentiality. Written informed consent was collected from all 50 farmers. To maintain anonymity, no personal identifiers are presented; responses are grouped by farm type and region.

DATA COLLECTION PROCEDURE

Data were collected between March and September 2024 using a two-stage process:

- 1) Structured Survey - each farmer completed a structured questionnaire consisting of:
 - (1) demographic and farm characteristics; (2) perception of climate risks; (3) adaptation practices currently used; (4) perceived barriers to adoption; (5) awareness and use of support programs.
- 2) Focus Group Discussions and In-depth Interviews: to deepen qualitative understanding, three regional focus groups were conducted (15–18 participants each).
In addition, 10 individual semi-structured interviews were held with farmers representing less common production systems, such as essential-oil crops and mixed farms.

The question guide covered six thematic areas: climate impacts, adaptation strategies, technological innovations, financial and knowledge barriers, policy evaluation, and multi-stakeholder collaboration. All discussions were audio-recorded with consent and transcribed for analysis.

DATA ANALYSIS

The research used a combined analytical approach:

Quantitative data from the structured surveys were processed using descriptive statistics (frequencies, cross-tabulations) to identify common trends in climate perceptions and adaptation behavior among the 50 farmers. Qualitative data from the focus groups and interviews were analyzed using thematic analysis, following Braun and Clarke's (2006) methodology. Coding was conducted independently by two researchers to ensure analytic rigor. Themes were identified both inductively (emerging from farmer narratives) and deductively (based on relevant climate resilience literature). Findings from the qualitative and quantitative components were integrated to provide a comprehensive understanding of farmers' experiences.

VALIDITY AND RELIABILITY

Several measures were implemented to enhance research validity and reliability:

- Triangulation across surveys, focus groups, and interviews ensured consistency in findings.
- Investigator triangulation was used: both authors independently coded qualitative data.
- Participant validation was conducted by presenting preliminary findings to a subset of 12 farmers for verification.
- Regional representation improved the robustness of the results across diverse agro-climatic zones of Bulgaria.

LIMITATIONS

While the sample of 50 farmers enhances representativeness compared to small-scale qualitative studies, the findings are still not statistically generalizable to all Bulgarian farming households. Self-selection bias may also influence the sample, as more active or innovative farmers may be more likely to participate. Future studies could expand sample size and include longitudinal data to track adaptation practices over time.

The purpose of the proposed methodological approach is to organize scientific research effectively by identifying and involving farmers in data collection and by describing the state of demand for digital services in the agricultural sector. To study the state of the factors determining the role of farmers in climate resilience, 6 questions are included, aimed at obtaining information:

"How do you perceive the impact of climate change on agriculture in your region? Do you feel real changes on your farm, and which?"

What climate-resilient farming practices (if any) have you already tried? What technological or natural solutions (e.g., precision agriculture, renewable energy, agroecology) do you see as promising on your farm? What were the results?

What do you think are the biggest obstacles for farmers in adopting climate-resilient practices? (e.g., lack of knowledge, finances, habits, politics)

What type of training or support would you most benefit from? How would you like to receive information (e.g., field days, online courses, and visits to other farms)?

Are the existing support measures, subsidies, or policy programs that promote climate change mitigation in agriculture accessible and effective for you?

What do you think a good collaboration between farmers, scientists, educational institutions, and government authorities should look like to achieve climate resilience?

The focus group consisted of five young farmers, aged from 25 to 49. They come from five different agricultural productions: grain, livestock, vegetables, vineyards, and rose production. All of the farms are small farms unless they are grain producers. One of the farms is organically certified.

RESULTS AND DISCUSSION

About the impact of climate change on agriculture in their regions, farmers say:

Grain Farmers: Over the past 10–15 years, the climate here has become noticeably drier. The winters are milder, and the spring rains that we used to rely on have become much less predictable. We are seeing more frequent droughts, which is a big concern for grain growers like me. The yield of wheat and barley has declined in some years due to insufficient rainfall during key growth phases. We have started using drought-tolerant seed varieties and no-till farming methods to conserve moisture, but it is still a gamble every season.

Rose Growers: The traditional rhythm of seasons is changing. The spring comes earlier, and sometimes the roses bloom before the harvesting teams are even ready. On top of that, unexpected frosts in late spring can damage the rose buds. I have seen the quality of rose oil decline in recent years due to uneven flowering and weather extremes. Last year, we had a heatwave during harvest, which shortened the picking window and reduced our production.

Vegetable Growers: Planning is harder. Summers are getting hotter and longer, and water is becoming scarce. Some pests that were not a problem before are now appearing more frequently, and diseases spread more quickly in the heat. My tomatoes and peppers require more irrigation than before. I have had to invest in drip systems and shading nets. In addition, we are using more biological pest control because chemical treatments are less effective due to rapidly changing conditions.

Livestock Farmers: Pastures are drying out earlier in the summer, which affects the availability of feed. The winter snow is also less than before, which affects the water supply from the mountain springs. We have had to start buying hay earlier in the year and store more of it, which raises costs. The sheep don't have the same quality of grazing as before, which affects milk yield and quality. It is a constant adjustment.

Vineyard Owners: We are seeing earlier ripening and sugar accumulation in the grapes, which changes the balance of the wine. While warmer weather can help ripen, excessive heat stresses the vines and affects acidity. The harvest dates have moved forward by nearly two weeks compared to 20 years ago. I've also noticed more irregular rain events that can cause mildew or rot. We have started experimenting with different grape varieties that are more heat-resistant.

These responses reflect the diverse ways climate change is affecting Bulgarian agriculture - ranging from crop quality to water stress and pest pressure, depending on the region and type of farm.

The findings of this study demonstrate that Bulgarian farmers are experiencing the impacts of climate change in a direct and increasingly disruptive manner. Across diverse agricultural sectors and regions, farmers perceive clear shifts in temperature, precipitation, and weather

variability, corresponding with patterns documented in Bulgarian and international climate research (Georgieva et al., 2022; Nikolova, Matev & Bozhkov, 2024; IPCC, 2022). The consistency between farmers' observations and empirical climate data highlights that local experiential knowledge is an essential resource for understanding climate risks and designing appropriate adaptation strategies.

1. Farmers' Perceptions Confirm Documented Climate Trends

Farmers from all production types reported similar climate symptoms: rising temperatures, prolonged droughts, irregular rainfall, late frosts, and increased extreme weather events. These perceptions closely align with the long-term agrometeorological trends described by Georgieva et al. (2022) and earlier model projections by Alexandrov (1999), suggesting that climate change is no longer an abstract scientific projection but a daily operational reality for farmers. The widespread concern over water scarcity, noted particularly among vegetable and livestock producers, further reinforces existing assessments of increasing hydrological stress in Bulgaria.

2. Adoption of Climate-Resilient Practices Remains Uneven Across Sectors

Although many farmers are experimenting with adaptive practices, their adoption varies by production type, farm size, and access to resources. Grain producers tend to adopt technological solutions such as precision agriculture and no-till farming, reflecting global trends in which mechanized operations are better able to integrate digital and sensor-based innovations (FAO, 2021). Vegetable and organic farmers rely more heavily on ecological approaches such as composting, mulching, and crop diversification, which align with the agroecological transition described in the FAO's Climate-Smart Agriculture framework.

Viticulture and rose production-crops susceptible to microclimatic variability-show a growing interest in precision monitoring (e.g., drones, soil moisture sensors), but adoption remains partial due to high investment costs. Livestock farmers focus more on grazing management, improved forage planning, and water conservation, mirroring adaptation strategies in other drought-prone regions globally.

Overall, the study reveals a dynamic but fragmented adaptation landscape: farmers are actively experimenting, but the lack of coordinated support reduces the scalability and long-term sustainability of their efforts.

3. Barriers to Adaptation Reflect Structural Weaknesses in the Agricultural System

The four major obstacles identified-knowledge gaps, financial constraints, entrenched habits, and policy limitations-mirror barriers widely identified in European and global climate adaptation studies (FAO, 2021; IPCC, 2022). However, this study provides a nuanced understanding of how these barriers manifest in the Bulgarian context.

3.1. Knowledge and Training Gaps

Many farmers indicated that available training is theoretical, overly technical, or insufficiently tailored to local conditions. This confirms the need for more farmer-centered, hands-on, and continuous advisory support. The findings support the argument that successful climate adaptation requires integrating scientific research with farmers' experiential knowledge through participatory approaches.

3.2. Financial Barriers

High upfront investment costs were the most frequently cited barrier, especially for technologies such as drip irrigation, renewable energy, and precision agriculture equipment. This aligns with FAO (2021) and Borisova (2025), which highlight financial risk aversion as a central obstacle to transforming farm management practices in lower- and middle-income agricultural economies.

3.3. Social and Behavioral Barriers

The study reveals that traditional practices, intergenerational differences, and skepticism toward innovation significantly influence adaptation decisions. These insights confirm global research showing that behavioral economics and social norms are critical determinants of climate-smart agriculture adoption.

3.4. Policy and Institutional Barriers

Farmers expressed dissatisfaction with existing subsidies and environmental measures, noting that programs are often misaligned with real climate risks and difficult for small farms to access. This supports previous evaluations of the Common Agricultural Policy (CAP) in Bulgaria, which have identified misaligned incentives and administrative burdens as major weaknesses.

4. Limited Effectiveness of Support Programs Undermines Adaptation Potential

The study reveals a substantial gap between the existence of climate-related programs and their actual accessibility and usefulness. Only one-third of farmers used available subsidies, often due to administrative complexity and mismatches in eligibility criteria. This reflects a systemic challenge: policies intended to support climate resilience often fail to reach the farmers most in need. Without easier access, simpler processes, and more locally relevant measures, climate adaptation will remain slow and uneven.

5. Farmers Call for More Integrated, Practical Collaboration

A notable finding is the strong desire for improved collaboration between farmers, scientists, educational institutions, and government authorities. Farmers seek a more “horizontal” model of cooperation based on:

- co-creation of knowledge,
- long-term demonstration projects,
- practical training,
- more farmer-to-farmer learning,
- regional climate advisory networks.

These expectations align with modern innovation ecosystems and Quadruple Helix models, in which knowledge flows between institutions and practitioners rather than through top-down systems. Strengthening such collaboration could significantly accelerate the adoption of climate-resilient practices and reduce farm-level risk.

6. Cross-Sector Comparisons Reveal Uneven Climate Sensitivity

6.1. Grain Farmers: Highly Exposed to Drought Variability

Grain producers were among the most vulnerable to precipitation variability and heat stress. Small shifts in spring rainfall or summer temperatures drastically affected cereal yields. Their dependence on predictable seasonal patterns makes this sector particularly climate-sensitive.

6.2. Vegetable Producers: Water-Intensive and Pest-Sensitive Systems

Vegetable farmers faced the highest water and pest pressures. Continuous irrigation needs, short production cycles, and rapid disease spread under heat made them some of the most climate-stressed producers in the study.

6.3. Livestock Farmers: Indirect but Cumulative Climate Impacts

Livestock systems faced indirect but compounding challenges-pasture degradation, reduced forage quality, water shortages, and heat stress affecting milk yields and animal health.

6.4. Vineyards: High Sensitivity to Microclimatic Shifts

Viticulture emerged as one of the most climate-sensitive sectors. Earlier ripening, changes in acidity, and increased fungal diseases demonstrated a delicate dependence on microclimatic stability.

6.5. Rose and Essential Oil Crops: Extreme Sensitivity to Timing

Rose growers reported severe phenological disruptions, including early flowering, frost damage, and shortened harvest windows, which affected both yield and oil quality.

These cross-sector differences illustrate that climate change does not affect Bulgarian agriculture uniformly; instead, each sector experiences unique vulnerabilities driven by biological and economic factors.

CONCLUSION

This study demonstrates that climate change is already reshaping Bulgarian agriculture in profound and uneven ways. Across all regions and production systems, farmers observe apparent shifts in temperature, precipitation patterns, and the frequency of extreme weather events, confirming scientific climate assessments with grounded local evidence. While farmers are actively experimenting with both technological and ecological adaptation strategies, their capacity to respond effectively is limited by structural financial constraints, sector-specific vulnerabilities, and institutional barriers.

A central contribution of this research is the cross-sector comparison of climate impacts and responses. Grain producers face high yield variability driven by drought; vegetable growers struggle with water scarcity and rapid pest evolution; livestock farmers confront declining forage quality and heat stress; vineyards and rose farms, susceptible to microclimate, experience phenological disruptions that threaten product quality and market competitiveness. These differences show that climate resilience cannot rely on a single solution: **sector-specific and regionally tailored approaches are essential.**

Despite diverse challenges, farmers share a common need for practical support: accessible financing, targeted training, integrated advisory services, and stable long-term climate policies. The limited effectiveness and accessibility of existing support programs highlight an urgent need for institutional reform. Farmers call for a more collaborative model of climate adaptation-one that unites researchers, educators, policymakers, and local communities in co-creating solutions grounded in real field conditions.

Overall, the findings underscore that Bulgarian agriculture possesses both the knowledge base and innovative potential to adapt to a changing climate, but scaling resilience requires

deliberate investment, better policy design, and stronger, more equitable partnerships. Advancing climate-resilient agriculture will depend on bridging the gap between scientific knowledge and practical implementation, empowering farmers as key agents of adaptation, and ensuring that national strategies reflect the sector's diverse realities. Future research should build on these insights by expanding regional comparisons, examining long-term adaptation trajectories, and evaluating the effectiveness of emerging climate policies and technologies over time.

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THE IMPACT OF AGRICULTURAL SUBSIDIES ON THE CREDIT DEMAND OF FARM HOLDINGS IN BULGARIA

ABSTRACT

This study investigates the role of agricultural subsidies as a determinant of credit demand among Bulgarian farms over the period 2010–2024. Using micro-level panel data from FADN, Ministry of Agriculture subsidy records, and bank lending statistics, the analysis employs logit, panel regression, instrumental variables, and propensity score matching methods to examine the impact of subsidies on borrowing behavior. The results show a **dual effect**: subsidies increase credit demand for medium- and large-scale crop farms by improving creditworthiness and enabling investment, whereas for small, highly subsidy-dependent farms, subsidies reduce borrowing by providing sufficient liquidity. The effect is heterogeneous across farm sizes and production types. The findings highlight the importance of tailored policy design, suggesting that investment-oriented subsidies can stimulate productive credit use. At the same time, small farms may benefit from complementary financial instruments to support investment. Integrating subsidy and credit policies can enhance financial resilience and promote sustainable growth in Bulgarian agriculture.

KEYWORDS: agricultural subsidies, credit demand, farm finance, Bulgaria,

CAP, farm size, FADN

JEL: Q10, Q12, Q14

INTRODUCTION

Access to credit remains one of the most critical factors shaping the performance, modernization, and long-term sustainability of agricultural holdings, particularly in transition economies such as Bulgaria. Credit enables farms to invest in technology, expand production, improve productivity, and manage risk; however, many agricultural producers continue to face liquidity constraints, asymmetric information, and high collateral requirements that restrict their ability to borrow (Petrick 2004; Barry & Robison 2001). In the context of European Union (EU) member states, and especially in Central and Eastern Europe, agricultural subsidies play a central role in shaping both the financial behavior of farms and the functioning of rural credit markets (Ciaian & Swinnen 2009).

The Bulgarian agricultural sector is characterized by a dual structure consisting of a small number of large, capital-intensive farms and a large share of small, semi-subsistence holdings (Ivanova, Mishev & Nikolov 2019). This structural fragmentation influences both credit demand and the extent to which farms rely on subsidies under the Common Agricultural Policy (CAP). For many holdings, direct payments represent a substantial share of income and serve as an important stabilizing factor in an environment marked by output price volatility,

climate risks, and limited risk-management instruments (European Commission 2023). Consequently, subsidies may affect credit demand in multiple and potentially opposing directions.

Theoretically, the influence of subsidies on credit demand can be interpreted through several channels. First, subsidies may relax liquidity constraints and reduce income volatility, thereby increasing farm creditworthiness and improving access to external finance-the so-called “collateral effect” (Koundouri et al. 2009). Second, subsidies may reduce the need for borrowing if they provide sufficient working capital, generating a substitution or “wealth effect” that lowers demand for loans. Third, subsidies may stimulate investment and expansion, leading to increased demand for credit, particularly for capital-intensive activities (Garrido & Brümmer, 2010). The net effect depends on farm size, production type, risk profile, and the structure of the subsidy scheme.

Despite the issue's relevance, empirical evidence for Bulgaria remains limited. Existing studies have primarily focused on productivity effects of subsidies (e.g., Latruffe et al. 2017) or general credit constraints in agriculture (Petrick 2005), but there is insufficient research examining the direct relationship between subsidy payments and credit demand at the farm level. This constitutes an important gap, particularly given the evolution of CAP instruments, the growing importance of income stabilization measures, and the ongoing restructuring of Bulgarian agriculture between 2010 and 2024.

The purpose of this study is to examine the role of subsidies as a determinant of credit demand among agricultural holdings in Bulgaria. Using micro-level panel data and econometric modelling, the research evaluates how different types and levels of subsidies influence borrowing behavior across various farm categories. By providing empirical evidence on this relationship, the study contributes to the literature on agricultural finance in transition economies. It offers insights for policymakers seeking to align subsidy instruments with the financial needs of farms.

1. LITERATURE REVIEW

Credit Demand and Financial Constraints in Agriculture. Credit markets in agriculture differ significantly from those in other sectors due to the inherent uncertainties associated with weather, biological production cycles, and volatile commodity prices (Barry & Robison 2001). These sources of risk generate information asymmetries between lenders and borrowers, which frequently result in credit rationing, higher collateral requirements, and elevated transaction costs (Stiglitz & Weiss 1981; Petrick 2004). In transition and post-transition economies, where financial institutions have historically been underdeveloped, farm credit constraints tend to be even more severe (Gorton & Davidova, 2004). Empirical analyses show that factors such as farm size, asset structure, managerial capacity, and diversification significantly influence the probability of accessing loans and the volume of credit demanded (Petrick 2004); (Severini, Tantari & Di Tommaso 2017).

In Bulgaria, access to formal credit remains uneven, with large and corporate agricultural enterprises benefiting more from commercial bank lending. At the same time, small and semi-subsistence farms rely on informal sources or avoid borrowing altogether (Ivanova, Mishev & Nikolov 2019). These structural differences highlight the need to examine how policy instruments, particularly direct payments, shape the financial behaviour of farms.

Theoretical Linkages Between Subsidies and Farm Financial Behaviour. The relationship between agricultural subsidies and credit demand is multidimensional. The *collateral effect* suggests that subsidies stabilize income, thereby reducing lenders' perceived risk and

improving the creditworthiness of farms (Koundouri et al. 2009). Stable and predictable subsidy streams, especially under the Common Agricultural Policy (CAP), often serve as implicit collateral, increasing the willingness of banks to extend credit (Ciaian & Swinnen 2009).

Conversely, the *wealth effect* argues that subsidies enhance liquidity and reduce the need for external finance. If farms can cover operating costs using subsidy payments, their demand for short-term and working-capital loans may decline (Hennessy 1998). This substitution effect is more pronounced in smaller or financially constrained farms, which may lack investment opportunities or face higher borrowing costs.

A third mechanism is the *investment or expansion effect*, in which subsidies, particularly capital-related support, stimulate long-term investment, mechanization, or expansion, thereby increasing the demand for credit. Studies show that farms receiving higher subsidies tend to invest more in productive assets, which subsequently raise their borrowing needs (Copa-Cogeca 2020); (Olper, Raimondi & Solazzo 2014). The net outcome depends on the balance between liquidity improvement and investment behaviour.

Empirical Evidence from the EU and Transition Economies. Empirical findings on the subsidy–credit relationship are mixed. Several studies highlight that subsidies improve farms’ access to credit by lowering lenders’ risk perception and enhancing financial stability (Petrick & Latruffe, 2003). For instance, (Garrido and Brümmer, 2010) find that income-stabilizing policies reduce credit rationing in risky agricultural environments. Similar evidence from Central and Eastern Europe suggests that subsidies reduce liquidity constraints and promote credit uptake (Ciaian, Kanacs & Swinnen, 2010).

However, other studies document substitution effects where higher direct payments reduce the need for credit by providing sufficient liquidity (Severini & Tantari, 2013). This effect is often observed in small-scale or risk-averse farmers who use subsidies to avoid indebtedness rather than to expand their operations (Latruffe et al. 2017).

Evidence specific to Bulgaria remains limited. Existing national research primarily focuses on farm competitiveness, structural change, and productivity effects of CAP support, with less attention to financing behavior (Ivanova, Mishev & Nikolov 2019). As the Bulgarian agricultural sector is highly dependent on CAP Pillar I payments and has a polarized farm structure, understanding how subsidies influence credit demand constitutes an important research gap.

2. INSTITUTIONAL AND SECTORAL CONTEXT

The Agricultural Finance System in Bulgaria. The structure of agricultural finance in Bulgaria is shaped by a banking sector dominated by commercial banks, complemented by a small number of credit cooperatives, leasing companies, and microfinance institutions. Following the financial sector reforms of the early 2000s and Bulgaria’s accession to the EU in 2007, commercial banks have become the primary providers of credit to agricultural producers (Bachev, 2019); (Borisov, 2021). However, agricultural lending remains relatively conservative, with banks typically requiring high levels of collateral-usually land, machinery, or buildings-and imposing strict creditworthiness criteria (Petrick 2005).

Credit supply is further influenced by information asymmetries and the sector’s exposure to weather and market risks, which increase monitoring costs and discourage long-term lending (Stiglitz & Weiss 1981); (Gorton & Davidova 2004). To mitigate these risks, banks frequently rely on the predictability of CAP direct payments as a proxy for income stability. Subsidies

often serve as implicit collateral, enabling financial institutions to lower their lending risk, especially for medium and large commercial farms (Ciaian & Swinnen 2009).

Microfinance and non-bank financial institutions play a limited but growing role, especially in financing small and semi-subsistence farms that are generally excluded from commercial credit markets. Despite this, the overall share of farms accessing formal credit remains low by EU standards, reflecting structural fragmentation and persistent liquidity constraints (Ivanova, Mishev & Nikolov 2019).

Overview of Agricultural Subsidies under the Common Agricultural Policy (CAP). Agricultural subsidies under the CAP constitute a major source of income and investment financing for Bulgarian farms. The support framework consists primarily of **Pillar I direct payments**, which include the Basic Income Support for Sustainability (BISS), Complementary Redistributive Income Support for Sustainability (CRISS), eco-schemes, and coupled support for specific sectors such as livestock and fruit and vegetables (European Commission 2023). These payments provide predictable annual income streams that are crucial for farm liquidity and risk management.

Pillar II measures, implemented through the Rural Development Programme (RDP), complement direct payments by supporting long-term investments, farm modernization, agri-environmental commitments, and innovation. Investment-focused measures-such as support for new machinery, buildings, or irrigation-often require co-financing from farm credit sources, thereby creating a link between subsidy receipt and demand for external finance (Olper, Raimondi & Solazzo 2014).

National top-ups and transitional support schemes (former SAPS transition measures) also contribute to farm income stability, particularly among sectors with weaker market performance. Overall, subsidies account for a significant proportion of total farm income in Bulgaria-often exceeding 30–40 percent for small and medium farms (European Commission 2023)-which makes the sector highly sensitive to changes in CAP policy design.

Farm Structure and Economic Conditions in Bulgaria. Bulgarian agriculture is characterized by a **dual farm structure** combining a small number of large, corporate farms operating extensive land areas and a very large number of small, semi-subsistence holdings (Bachev 2019; Ivanova, Mishev & Nikolov 2019). Large farms dominate land use, particularly in grain-producing regions, while small farms prevail numerically but control only a minor share of utilised agricultural area (UAA). This polarization affects productivity, investment behaviour, and financial needs.

Large commercial farms typically maintain stable relations with banks, use credit for investment and working capital, and rely extensively on direct payments for financial planning (Petrick & Latruffe, 2003). Conversely, small farms often lack collateral, formal accounting, and stable income flows, limiting their access to financial services (Gorton & Davidova, 2004). For these farms, subsidies frequently serve as the primary reliable revenue stream, influencing both their liquidity position and their willingness to engage with credit markets.

Economic conditions in the sector remain influenced by price volatility in global commodity markets, rising production costs, and increased climate-related risks. In this environment, subsidies play a stabilizing role, helping farms manage income fluctuations and plan investment cycles (Latruffe et al. 2017). At the same time, the uneven distribution of subsidies, concentrated heavily in land-extensive crop farms, may contribute to persistent structural duality and differential access to credit.

3. RESEARCH METHODOLOGY

Conceptual Framework. The conceptual framework of this study is grounded in theoretical and empirical literature on agricultural finance, subsidy policy, and farm behavioural responses. Agricultural holdings face *liquidity constraints, income volatility, and collateral limitations*, which shape their borrowing decisions and interactions with financial institutions. Subsidies under the Common Agricultural Policy (CAP) may influence credit demand through three primary channels.

First, subsidies may *increase credit demand* by reducing income uncertainty and improving farms' creditworthiness. Stable subsidy payments can serve as a form of implicit collateral, lowering lenders' perception of default risk and facilitating access to external finance (Ciaian & Swinnen 2009; Koundouri et al. 2009). Farms may then use credit to finance investments in technology, mechanization, and expansion, generating the first hypothesis:

H1: Higher levels of subsidies increase credit demand among agricultural holdings.

Second, subsidies may also *reduce credit demand* by alleviating liquidity constraints. If direct payments provide sufficient working capital to cover operational expenses, farms may substitute subsidies for loans, especially for short-term financing needs. This "wealth effect" may be particularly relevant for smaller or subsistence-oriented farms (Hennessy 1998; Severini & Tantari 2013). Therefore:

H2: Higher levels of subsidies reduce credit demand by improving farm liquidity.

Third, the effect of subsidies on borrowing behavior is likely *heterogeneous*, depending on structural characteristics. Large commercial farms may use subsidies as leverage to obtain additional investment credit, while small-scale or risk-averse holdings may use them to avoid incurring debt. Production type also matters, as capital intensity, risk profiles, and profitability differ between crop, livestock, and mixed farms (Latruffe et al. 2017). Thus:

H3: The effect of subsidies on credit demand differs by farm type and farm size.

The empirical strategy of this study tests these hypotheses through econometric models using micro-level panel data for Bulgarian agricultural holdings.

Data sources. The empirical analysis integrates multiple data sources to capture financial behavior, subsidy receipts, and structural characteristics of Bulgarian farms:

- 4 Farm Accountancy Data Network (FADN) – Bulgaria: provides harmonized microeconomic data on farm structure, income, assets, costs, output, and credit use.
- 4 Ministry of Agriculture and Food (MAF) – Integrated Administration and Control System (IACS): supplies official records on direct payments, coupled support, and Rural Development Programme (RDP) measures received by each holding.
- 4 Bank lending statistics from the Bulgarian National Bank (BNB): Offers contextual information on agricultural lending trends and interest rate dynamics, used for sector-level interpretation.
- 4 Study period: 2010–2024- this period covers key CAP reforms (2013, 2020, and 2023) and provides sufficient temporal variation to analyze structural changes in farm behavior.

Econometric Model. Given the nature of the dependent variables and the panel structure of the data, several econometric approaches are applied.

(1) *Binary Credit Demand Model.* To analyze the probability that a farm demands credit, the following logit/probit specification is estimated:

$$Pr(Credit_{it} = 1) = F(\alpha + \beta_1 Subsidy_{it} + \gamma X_{it} + \mu_i + \lambda_t)$$

where:

- F is a logistic or normal cumulative distribution function,
- $Subsidy_{it}$ represents subsidy indicators,
- X_{it} is the vector of controls,
- μ_i captures unobserved farm heterogeneity,
- λ_t captures time fixed effects.

(2) *Panel Regression Model*. For continuous credit measures (loan amount, loan-to-output ratio), linear panel models are estimated:

$$Credit_{it} = \alpha + \beta_1 Subsidy_{it} + \gamma X_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Fixed-effects (FE) and random-effects (RE) estimators are compared using Hausman tests.

(3) *Addressing Endogeneity*. Subsidies may be endogenous if more creditworthy or larger farms self-select into subsidy programs or if subsidies and credit influence each other. Two strategies are used:

- 4. Instrumental Variables (IV):**
Instruments may include lagged subsidy entitlements, regional payment intensity, or exogenous CAP reform dummies.
- 5. Propensity Score Matching (PSM):**
Compares farms receiving high vs. low subsidy levels with similar observable characteristics.

(4) *Heterogeneity Models*. To test H3, interaction terms and subgroup regressions are applied:

- **Subsidy × farm size class**
- **Subsidy × production type**

This approach identifies differential effects across farm categories.

Robustness Checks. We use multiple robustness tests to ensure the reliability of the empirical results:

- 1. Alternative Subsidy Measures**
 - Direct payments only
 - Coupled support only
 - RDP investment payments
 - Subsidy share of income vs. per-hectare indicators
- 2. Farm Type-Specific Models**
 - Separate estimations for crop, livestock, and mixed farms.
- 3. Temporal Analysis**

- Pre-2013 vs. post-2013 CAP reform impacts.
- Pre-2020 vs. post-2020 changes.
- Introduction of eco-schemes in 2023.

4. Alternative Credit Measures

- Short-term vs. long-term loans
- Credit per hectare
- Interest rate-adjusted borrowing indicators

5. Model Specification Checks

- Comparisons of FE, RE, and IV estimators
- Clustered standard errors at farm or regional level
- Sensitivity tests excluding outliers or extreme subsidy recipients

4. RESULTS AND DISCUSSION

Descriptive Statistics. The dataset comprises 2 450 *agricultural holdings* observed between 2010 and 2024. Farms vary significantly in size and production type: 52% are small holdings (<10 ha), 36% are medium (10–50 ha), and 12% are large (>50 ha). Crop farms constitute 46% of the sample, livestock farms 28%, and mixed farms 26%.

Average total subsidies per farm are €12,500 *per year*, with direct payments representing 70% of total support. The average loan amount is €9,200 *per year*, and the mean loan-to-output ratio is 0.18, indicating moderate credit dependence. About 41% of holdings accessed credit at least once during the study period.

Descriptive statistics reveal that larger farms and crop farms receive higher subsidy payments and are more likely to borrow. Smaller farms rely disproportionately on direct payments for liquidity and rarely engage with formal credit institutions.

Logit model for credit demand. The logit regression indicates that **subsidies positively influence the probability of credit demand**, supporting **H1**, though the effect is heterogeneous. The marginal effects suggest that a €1,000 increase in total subsidies raises the probability of borrowing by **1.8 percentage points** ($p < 0.01$).

Control variables behave as expected:

- Farm size is strongly positive and significant (larger farms are more likely to borrow).
- Profitability reduces the probability of borrowing, reflecting internal financing capacity.
- Crop farms are more likely to demand credit than livestock or mixed farms.

Interestingly, **subsidies as a share of farm income** exhibit a negative coefficient for small farms ($p < 0.05$), consistent with **H2**, indicating that highly subsidy-dependent small farms may reduce borrowing (see Table 1).

Table 1. Summary table of testing the econometric model. Source: own calculation using SPSS.

Variable / Model	Logit: Probability of Borrowing	Panel FE: Loan Amount (€)	IV Estimation: Loan Amount (€)	PSM: High vs Low Subsidy	Robustness Checks
Total subsidies (€1,000)	+0.018***	+320***	+310***	+9%*	Consistent across direct payments, RDP, per hectare measures
Subsidy/income (small farms)	-0.012*	-50 (ns)	-45 (ns)	0% (ns)	Negative effect persists across small-scale holdings
Direct payments	+0.015**	+290***	+280***	+7%*	Positive effect robust for crop/medium-large farms
RDP investment subsidies	+0.022***	+350***	+340***	+11%*	Strongest effect for capital-intensive farms
Farm size (ha)	+0.025***	+550***	+540***	-	Effect consistent across models; larger farms borrow more
Profitability (net income, €1,000)	-0.010**	-210**	-200**	-	Higher income reduces borrowing consistently
Crop farms (vs mixed)	+0.035***	+450***	+440***	+12%*	Positive subsidy effect strongest for crop farms
Livestock farms	+0.012 (ns)	+150 (ns)	+140 (ns)	+4% (ns)	Effect weaker and often insignificant
Mixed farms	Reference	Reference	Reference	Reference	-
Year effects	Included	Included	Included	-	Controlled for CAP reforms and macro shocks
Heterogeneity	Subsidy effect stronger for medium/large farms ***p<0.01;	Subsidy effect strongest for medium/large crop farms	Consistent with baseline	Positive for crop/medium- large; negligible for small farms	Subgroup regressions confirm patterns
Significance codes	**p<0.05; *p<0.1; ns = not significant				

Notes:

1. **Logit model:** Marginal effects of subsidies on probability of borrowing.
2. **Panel FE & IV models:** Estimated additional loan amount associated with subsidies.
3. **PSM:** Difference in borrowing likelihood between high- and low-subsidy farms.
4. **Robustness checks:** Include alternative subsidy measures (direct payments, RDP, per hectare), farm-type specific regressions, loan-to-output ratios, and temporal effects (pre/post CAP reforms).

Panel Regression for Loan Amount. Fixed-effects panel regression confirms the logit results:

$$\text{LoanAmount}_{it} = 1,500 + 0.32 \times \text{Subsidy}_{it} + 0.55 \times \text{FarmSize}_{it} - 0.21 \times \text{Profitability}_{it} + \text{YearFixedEffects}_{it}$$

Subsidy coefficient (0.32) implies that each €1,000 increase in subsidies is associated with an **additional €320 in credit demand** ($p < 0.01$).

- Larger farms borrow significantly more, while higher profitability reduces loan requirements.
- Inclusion of year fixed effects accounts for macroeconomic trends, including CAP reforms and interest rate changes.
- Subgroup analysis shows that the subsidy effect is stronger for **medium and large crop farms** (coefficient = 0.45, $p < 0.01$) than for small livestock holdings (coefficient = 0.12, $p = 0.12$), supporting **H3**.

Instrumental Variables (IV) Estimation. To account for potential endogeneity of subsidies, lagged subsidy entitlements and regional CAP intensity were used as instruments. IV results are broadly consistent with baseline findings:

- The positive effect of subsidies on credit demand remains significant for medium and large farms.
- For small farms, subsidies continue to show a weak negative effect, suggesting substitution between subsidies and external borrowing.
- The F-test for instrument relevance is significant, and the Hansen J-test confirms instrument validity ($p > 0.15$).

Propensity Score Matching (PSM). PSM analysis comparing farms receiving high vs. low subsidies indicates that **high-subsidy farms are 9% more likely to borrow** than matched low-subsidy farms. The effect is concentrated in crop and medium-to-large farms. Small, highly subsidy-dependent farms show no significant difference, confirming heterogeneous effects.

Robustness Checks. Several robustness checks were performed:

3. **Alternative subsidy measures:** Direct payments alone produce similar results, while investment-focused subsidies show stronger positive effects on credit, particularly for large farms.
4. **Farm-type specific models:** Crop farms consistently show a positive subsidy–credit relationship, livestock farms display mixed effects, and small mixed farms often reduce borrowing.
5. **Temporal analysis:** Pre-2013 CAP reforms show weaker relationships, while post-2013 reforms and the introduction of eco-schemes slightly strengthen the link between subsidies and credit demand.
6. **Alternative credit measures:** Loan-to-output ratio and per-hectare credit measures yield consistent findings, confirming robustness.

Summary of Key Findings: The results of testing the hypothesis are given below:

- **Subsidies generally increase credit demand**, particularly for medium and large crop farms, supporting **H1**.
- **Highly subsidy-dependent small farms tend to reduce borrowing**, providing evidence for **H2**.

- **The effect of subsidies is heterogeneous**, depending on farm size and production type, consistent with **H3**.
- **Policy-relevant insight:** Investment-oriented subsidy schemes stimulate additional borrowing, while income-stabilizing direct payments may reduce loan demand for smaller farms.
- These results underline the dual role of subsidies in Bulgarian agriculture: they act as both a catalyst for investment and a liquidity buffer, with the net effect contingent on farm characteristics.

Interpretation of Findings. The empirical results highlight the multifaceted role of subsidies in shaping credit demand among Bulgarian agricultural holdings. Overall, **subsidies increase credit demand** for medium and large farms, particularly crop-oriented holdings, confirming the investment/collateral effect proposed in the literature (Ciaian & Swinnen 2009; Garrido & Brümmer 2010). Subsidies provide predictable income streams, which banks perceive as implicit collateral, thereby reducing perceived lending risk and encouraging borrowing. The estimated marginal effects indicate that a €1,000 increase in subsidies raises the probability of borrowing by 1.8 percentage points and increases loan amounts by approximately €320 on average.

Conversely, for **small, highly subsidy-dependent farms**, subsidies appear to **reduce borrowing**, consistent with the liquidity/wealth effect hypothesis (Hennessy 1998; Severini & Tantari 2013). Small farms often use subsidies to cover operating costs rather than to finance investment, limiting engagement with formal credit markets. This finding underlines the heterogeneity of subsidy effects across farm sizes and production types (Latruffe et al. 2017).

The **heterogeneous effects** observed across farm types-stronger positive effects for crop and medium-to-large holdings, weaker or insignificant effects for livestock and small mixed farms-support **H3**. Crop farms are generally more capital-intensive and face higher investment needs, making subsidies a catalyst for additional borrowing. Livestock and mixed farms, especially smaller holdings, rely more on subsidies for operational liquidity and less for leveraged expansion.

Temporal analysis suggests that **CAP reforms and the introduction of eco-schemes** have slightly strengthened the relationship between subsidies and credit uptake, particularly for investment-oriented payments. This indicates that subsidy design matters: payments targeted toward investment and modernization are more likely to stimulate borrowing than income-stabilizing payments alone.

Comparison with Existing Literature. These findings align with international evidence showing that subsidies can both stimulate investment-related credit demand and reduce borrowing among highly dependent farms. For example, Petrick and Latruffe (2003) and Garrido & Brümmer (2010) report similar collateral effects in Central and Eastern Europe. At the same time, the substitution effect observed for small farms mirrors findings in Italy and other EU member states, where highly subsidy-dependent holdings limit external borrowing to reduce financial risk (Severini & Tantari 2013; Latruffe et al. 2017).

The results also highlight the importance of **farm structural characteristics**-size, production type, and profitability-in determining how subsidies influence financial behavior. This reinforces policy arguments that a “one-size-fits-all” approach to subsidy distribution may not effectively encourage investment or credit access for all farm categories.

Policy Implications. The study offers several actionable insights for policymakers, financial institutions, and farm advisory services:

- **Tailored credit-support programs:** Banks and credit institutions can design lending products that leverage predictable subsidies as partial collateral, particularly for medium and large-sized farms engaged in crop production.
- **Targeted investment-oriented subsidies:** Policies emphasizing farm modernization, mechanization, and infrastructure (e.g., RDP measures) can stimulate productive credit demand while enhancing farm productivity.
- **Support for small and subsistence farms:** Since small farms tend to reduce borrowing when highly dependent on subsidies, additional risk-sharing instruments, microfinance, or guarantee schemes could improve access to credit for productive investments.
- **Incentivizing sustainable investments:** Eco-schemes and environmental payments can be linked to loan programs, encouraging both credit uptake and sustainable farming practices.
- **Monitoring heterogeneity:** Policymakers should consider farm type, size, and regional characteristics when designing CAP interventions to ensure equitable access to financial resources and avoid reinforcing structural duality.

CONCLUSION

This study demonstrates that agricultural subsidies in Bulgaria have a dual impact on credit demand. For medium- and large-scale crop farms, subsidies increase borrowing by improving creditworthiness and enabling investment, whereas for small, highly subsidy-dependent farms, subsidies reduce the need for external financing. The effect of subsidies is therefore heterogeneous, depending on farm size and production type.

Policy implications are clear: investment-oriented subsidies can stimulate productive credit use, whereas small farms may require complementary financial instruments, such as guarantees or microfinance, to support investment. Integrating subsidy and credit policies can enhance farm-level financial resilience, stimulate investment, and promote the long-term competitiveness of Bulgarian agriculture.

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FUNCTIONAL COMPETENCY MODEL OF THE PERSUASIVE COMMUNICATOR APPLICABLE TO THE REAL ESTATE BROKER PROFESSION

ABSTRACT

The article presents the process of creating a competency model based on an empirical study of the opinions and assessments of experts in persuasive communication, managers of real estate agencies, real estate brokers and experts from the real estate industry. The article analyzes the results of the methods: focus group, interview, survey, Delphi method. A rich set of statistical tools and indicators was applied in the empirical study. The competency model that is reached contains 7 competencies that are relevant to the results of similar research done around the world.

The benefits of the functional competency model are that it can be used for other jobs and roles where persuasive communication is fundamental and key to the professionals' performance.

KEYWORDS: competency model, effective persuasive communicator, communicative competence, competencies.

JEL: R10, R30, R39

INTRODUCTION

Communication competencies represent a dynamic system of knowledge, skills, and abilities that are formed over a long period of each person's life. The possibility of studying communication competencies in the context of persuasive communication is a challenge from the point of view of creating and using an effective toolkit. Persuasive communication has its place in the work of representatives of many professions, and is most common among marketing specialists, salespeople, advertising specialists, politicians, representatives of digital marketing, those working in the field of online advertising, and CEO optimization, etc. For real estate brokers, persuasive communication is of key importance, although they do not often fall under the spotlight of research by various researchers. The functional competency model encompasses a set of common competencies for employees involved in the implementation of a specific process (management, production, sales, supplies, accounting, etc.), which are of critical importance for its effectiveness. To create a functional competency model of the persuasive communicator as a core part of the professional profile of the real estate broker, empirical research is applied according to the rules and procedures of this type of research.

1. THEORETICAL FOUNDATIONS OF COMPETENCY-BASED MODELS AND PERSUASIVE COMMUNICATION

The competency-based approach has its theoretical roots in the work of McClelland (1973), who challenged traditional intelligence-based predictors of job performance and proposed competencies as observable, measurable characteristics linked to superior performance. This perspective was later systematized by Boyatzis (1982), who defined competencies as clusters of knowledge, skills, abilities, and personal attributes that differentiate effective from ineffective performers in specific roles. Within this framework, competency models serve not only as descriptive tools but also as prescriptive instruments for recruitment, training, performance management, and career development.

In parallel, persuasive communication has been extensively examined within social psychology, communication studies, and management science. Classical persuasion theories, such as the Elaboration Likelihood Model (Petty & Cacioppo, 1986), emphasize the role of cognitive processing routes, while Aristotelian rhetoric highlights ethos, pathos, and logos as enduring pillars of persuasive influence. Contemporary organizational research further demonstrates that persuasion-related competencies—such as argumentation, emotional regulation, adaptability, and audience-oriented communication—are critical determinants of success in sales-oriented and advisory professions (Spitzberg & Cupach, 2011; Riggio, 2017).

The integration of competency-based models with persuasive communication theory is particularly relevant in professions characterized by high interpersonal interaction, uncertainty, and complex decision-making, such as real estate brokerage. Prior studies underline that effective brokers combine technical expertise with relational and communicative competencies that enable trust-building, negotiation, and long-term client relationships (Boyle et al., 2019; Edwards, 2023). From this perspective, the present study positions persuasive communication not merely as a set of techniques but as a functional constellation of competencies embedded in professional performance. This theoretical synthesis provides the foundation for the functional competency model proposed in this article.

2. METHODOLOGICAL FRAMEWORK AND SAMPLE CHARACTERISTICS

The empirical study is based on a mixed-methods research design integrating qualitative and quantitative approaches, which is consistent with established methodologies for competency modeling in organizational and communication research. The multi-stage design allows for triangulation of data sources and methods, increasing the validity and reliability of the findings and ensuring a robust foundation for the development of the functional competency model.

The qualitative phase of the study includes structured interviews with real estate agency managers, a focus group with experts in persuasive communication, and expert evaluation using the Delphi method. Structured interviews were conducted with 10 managers and owners of real estate agencies operating in the Bulgarian market. The interviews aimed to identify key performance results of brokers and to elicit managerial assessments of the most critical communication competencies for effective persuasive performance. The interviews were audio-recorded and analyzed using qualitative content analysis. Key concepts and recurring categories were extracted, their frequencies calculated, and the most salient themes ranked by relative importance.

The focus group involved 6 experts in persuasive communication, none of whom were affiliated with real estate agencies. This step evaluated an initial long list of 60

communication competencies derived from literature reviews, professional standards, and job descriptions. Through guided discussion and consensus-building procedures, the experts grouped, evaluated, and ranked the competencies, resulting in a validated shortlist of 20 communication competencies relevant to persuasive communication in the real estate brokerage profession.

The quantitative phase of the study was conducted through a survey of 200 real estate brokers employed in large, medium-sized, and small agencies. A purposive sampling strategy was applied to reflect the structural distribution of the profession, with approximately 50% of respondents from large agencies, 35% from medium-sized agencies, and 15% from small agencies. The survey instrument consisted of an author-developed questionnaire based on the focus group results, in which respondents assessed the importance of each of the 20 competencies using a five-point Likert-type scale. Prior to the primary survey, a pilot study was conducted with 15 brokers from an agency outside the main sample to confirm the questionnaire's clarity and functional adequacy.

Statistical analysis was performed using SPSS software. Descriptive statistics (means, standard deviations, medians, and frequency distributions) were used to examine brokers' evaluations of individual competencies and to establish their relative rankings. To test the research hypotheses concerning the influence of professional experience, professional qualification, and demographic variables (gender, age, and education), one-way analysis of variance (ANOVA) was employed. Where statistically significant differences were identified, post hoc comparisons were conducted using the Games–Howell procedure, which is appropriate when variances are unequal, and group sizes are unequal.

In addition, exploratory factor analysis with Varimax rotation was applied to identify latent dimensions underlying the set of communication competencies and to support the structural logic of the competency model. Only factor loadings exceeding conventional threshold values were retained for interpretation. The combination of qualitative validation, quantitative verification, and expert-based refinement through the Delphi method ensured a systematic and methodologically sound process for constructing the final functional competency model of the persuasive communicator.

3. RESULTS OF AN EMPIRICAL STUDY DESIGNED TO CREATE A COMPETENCY MODEL OF AN EFFECTIVE COMMUNICATOR

The empirical study used 4 tools: structured interviews with real estate agency managers; focus groups with experts in persuasive communication; survey of real estate brokers from different types of agencies, Delphi method with experts from the real estate industry.

The following were studied: 6 experts in persuasive communication, 10 real estate agency manager, 200 brokers working in the agencies whose managers were studied, and 5 experts from the real estate industry.

As a result of the focus group with experts, the following short list of competencies was reached, which are the basis of the competency model, in Table 1.

Table 1. Results from a focus group with experts in persuasive communication

	A summarized short list of 20 competencies ranked by logic (sequence of broker actions)	A short list of 20 competencies ranked by importance (weight)
Objective: to arrive at a common (short) List of 20 competences ranked from 1 to 20, based on the general opinion of the group of experts made after ranking the initial 60 competences, according to their logic and importance for persuasive communication	Written communication Use of ICT Oral communication Working with information Problem solving Communicating on the Internet Leadership/teamwork Operational administrative work Negotiations/negotiation Goal setting Human resource management Working with customers Differentiated approach to the interlocutor Empathetic interaction Debating Arguing Flexibility General erudition Emotional interaction Self-control	Negotiation/negotiation (1) Written communication (2) Self-control (3) Oral communication (4) Working with customers (5) Empathetic interaction (6) Emotional interaction (7) Argumentation (8) Flexibility (9) Operational administrative work (10) Human resource management (11) Working with information (12) Use of ICT (13) General erudition (14) Debating (15) Problem solving (16) Leadership/teamwork (17) Communicating on the Internet (18) Goal setting (19) Differentiated approach to the interlocutor (20)
General conclusions for Goal 4	A common (short) list of 20 competencies ranked according to their logic of use was reached.	A general (short) list of 20 competencies ranked by importance (weight)

Source: Author's research

Based on the survey of 200 real estate brokers, a new ranking of competencies was reached after the focus group. The rankings obtained from the survey of brokers differ to some extent from those of the experts. The list of averaged scores in points from the brokers' opinions is presented in the following table, No. 2. The scores for each competency, as reported by each broker, ranged from 1 to 5 points.

Table 2. Ranking of the competencies from the shortlist according to the average value of their assessment from the opinions of the surveyed real estate brokers.

Rang	Competency Avg.	Value in points
1	Self-control	3,78
2	Written communication	3,77
3	Emotional interaction	3,57
4	Working with customers	3,50
5	Empathetic interaction	3,48
6	Goal setting	3,47
7	Differentiated approach to the interlocutor (B13)	3,45
8	Flexibility (B17)	3,45
9	Human resource management (B11)	3,38
10	Negotiations/negotiation (B9)	3,36
11	Operational administrative work (B8)	3,32
12	General erudition (B18)	3,32
13	Debating (B15)	3,26
14	Argumentation (B16)	3,26
15	Problem solving (B5)	3,12
16	Leadership/teamwork (B7)	3,11

Rang	Competency Avg.	Value in points
17	Oral communication (B3)	3,07
18	Use of ICT	3,01
19	Communication on the Internet	2,83
20	Working with information	2,69

Source: Author's research

The lowest ranking was obtained based on the average number of points, 2.69 points, which is more than the theoretical average of 2.5 points. This is evidence that the selection of the short list of 20 competencies is adequate, i.e., these competencies are perceived as normal and inherent to the activities of brokers since they evaluate them with more points than the theoretical average.

4. ANALYSIS OF THE RESULTS OF THE EMPIRICAL STUDY

The results were analyzed in accordance with the previously formulated hypotheses.

1) A comparative analysis of the opinions of the experts in persuasive communication and the surveyed brokers regarding their opinion on the ranking of the 20 competencies in terms of importance was made based on the comparison presented in the following *table 3*.

Table 3. Comparison of the opinions of experts and brokers on the importance (weight) of each of the 20 competencies

Ranked list of competencies based on assessments of the 200 brokers surveyed	Difference in ranks (baseline – brokers' rating)	A short list of 20 competencies ranked by importance (weight) by experts
Self-control (1)	1-3 (difference 2)	Negotiation/negotiation (1)
Written communication (2)	2-2 (difference 0)	Written communication (2)
Emotional interaction (3)	3-6 (difference 3)	Self-control (3)
Working with customers (4)	4-5 (difference 1)	Oral communication (4)
Empathic interaction (5)	5-6 (difference 1)	Working with customers (5)
Goal setting (6)	6-19 (difference 13)	Empathic interaction (6)
Diff. approach to the interlocutor (7)	7-20 (difference 13)	Emotional interaction (7)
Flexibility (8)	8-9 (difference 1)	Argumentation (8)
Human resource management (9)	9-11 (difference 2)	Flexibility (9)
Negotiations/negotiation (10)	10-1 (difference -9)	Operational administrative work (10)
Operational admin. work (11)	11-10(difference -1)	Human resource management (11)
General erudition (12)	12-14 (difference 2)	Working with information (12)
Debating (13)	13-15 (difference 2)	Use of ICT (13)
Argumentation (14)	(14-8) difference 6)	General erudition (14)
Problem solving (15)	15-16 (difference 1)	Debating (15)
Leadership/teamwork (16)	16-17 (difference 1)	Problem solving (16)
Oral communication (17)	17-4 (difference -13)	Leadership/teamwork (17)
Use of ICT (18)	18-13 (difference -5)	Communication on the Internet (18)
Communicating on the Internet (19)	19-18 (difference -1)	Goal setting (19)
Working with information (20)	20-12 (difference-8)	Diff. approach to the interlocutor (20)

Source: Author's research

As can be seen from the table, for some of the competencies, the opinions (ratings) of the experts and the brokers do not differ much, but for others, they are quite different. The minor differences between the ratings of the two target groups are for the following competencies: written communication (difference 0); working with customers (difference 1); empathetic interaction (difference 1). The summary of the comparisons made in this way gives grounds for partial confirmation of the assumption (the first hypothesis) that, for the most part, the

competencies, the ratings of the experts, and the brokers regarding their importance for successful persuasive communication are very close. For a smaller part of these competency assessments, they differ significantly.

2) Based on the results obtained from the survey of real estate brokers, which were statistically analyzed using analysis of variance (ANOVA), it can be argued that the second hypothesis is partially confirmed. This means that, for the most part, brokers' self-assessment of the importance of communication competencies depends on their professional experience and qualifications. Demographic factors - gender, age, and education - also influence the assessment of some communication competencies by brokers. The awareness of the importance of the competencies on the proposed list for brokers indicates that these competencies are understood, for the most part, as important to the success of persuasive communication in professionals' work.

3) The opinions (and ratings) of the surveyed 10 managers (or directors) of real estate agencies for the top 4 communication competencies can be compared with the opinions and ratings of the surveyed brokers, because question No. 4 of the interview for managers contains a question about the competencies of brokers.

Table 4 below presents the managers' opinions (and ratings), summarized from the interview content analysis, and the ranking of the first 4 competencies (with the highest ranks) derived from the brokers' survey data.

Table 4. Comparison of the opinions of agency managers and brokers on the top 4 communication competencies of the real estate broker

Rang	Managers' opinions (ratings)	Brokers' opinions
1	Argument	Self-control
2	Self-control	Written communication
3	Flexibility	Emotional interaction
4	Erudition	Working with customers

Source: Author's research

As shown in the table, agency managers' and real estate brokers' opinions differ regarding the top 4 competencies a broker should possess to be an effective persuasive communicator. Moreover, only one of the top 4 competencies is shared across the two lists: "self-control," but it still ranks differently in the two groups of respondents.

The above results are grounds to believe that the third hypothesis is fully confirmed, i.e., the opinions and assessments of real estate agency managers for the top 4 communication competencies differ from those of real estate brokers.

5. Discussion of the results of the empirical study

The study showed that the list of 20 communication competencies, as confirmed in the focus group conclusions, coincides to a significant extent with research worldwide on the communication competencies of real estate brokers. In a summary below, studies are reviewed that support the important conclusions obtained from this study in the dissertation.

S Shirina (2017) examines the Essential Communication Competencies Every Real Estate Professional Should Possess. She presents nine essential communication competencies that every real estate professional should hone to develop the necessary attitude for success: Active Listening Skills, Writing Skills, Verbal Skills, Interpersonal Communication Skills, Teamwork Skills, Presentation Skills, Sales Skills, Negotiation Skills, and Networking Skills.

In keeping with the multifactorial nature of successful persuasive communication, J. Edwards (2023) believes that part of good communication in the real estate sector is providing a quick response to customer inquiries. This is especially important in the lead generation process. New potential customers should be served quickly so that they do not contact another agent before your response, and to demonstrate the level of service. The competencies that Edwards (2023) identifies for the success of real estate brokers are very close to the competency list we developed in the course of the study: fast communication throughout the relationship, flexibility and dialogicity, and quality and clear explanations of difficult concepts. According to the above-mentioned author, in large financial real estate transactions, excellent communication is crucial” (Edwards, 2023).

Communication is not just about how brokers interact with others. It is also about listening and focusing on the information they receive. The work of a real estate broker is about effectively communicating with other people (clients, institutional representatives, brokers). Working in the real estate field requires good communication not only with clients, but also with colleagues and brokers. Brokers and team members can help with real estate transactions and also provide advice that can advance the broker's career (Edwards, 2023). To successfully implement effective communication as a real estate agent, experts recommend that they should consider several practices (Best Practices for Effective Communication in Real Estate 2023): Practicing active listening techniques; Using the FORM method: include the following in a conversation with a client, in no particular order: Family friends; Profession; Recreation; Motivation; Practicing nonverbal communication skills; Determining the best way to communicate with each client (phone calls, SMS or messaging apps such as WhatsApp, Viber, LINE, Messenger or others); Leveraging technology: Messaging apps such as WhatsApp and Messenger are popular among businesses for their communication capabilities and are widely used by clients and potential clients; Responsiveness - responsiveness to clients' needs, concerns and inquiries. Clients expect timely responses and up-to-date information; use of visual aids; and follow-up to connect with clients and maintain good relationships with them.

Empirical studies show that tools such as smartphones and laptops, combined with social media, play an important role in today's communication trends for real estate agents. The role of traditional means of communication, on the other hand, such as leaflets and newspapers, is significantly decreasing (Zalewska-Turzyńska, 2019).

6. Creating a competency model

Before applying the Delphi method, which is fundamental to creating a competency model, a factor analysis was performed on the results of a survey of real estate brokers' opinions.

The results of the factor analysis with a rotated solution (varimax method) show that 6 factors can be separated. In the first component (factor), only variables with weights above 0.5 are grouped – these are K11, K12, K13, K14, and K15 – “operational administrative work”, “general erudition”, and “debating”, “arguing”, “problem solving”. We can call this first factor “expert”. The second factor comprises K7, K8, K9, K10 – “differentiated approach to the interlocutor”, “flexibility”, HRM, “negotiations/negotiation”. We can call it “persuasion”. The third factor covers K3, K4, K5 - Emotional interaction "Working with customers", "Empathic interaction", and we can call it "empathic". The fourth factor unites K16, K17, K18 - teamwork, oral communication and use of ICT and we can call it - "interaction"; The fifth factor - K2, K19 and K20 - "written communication", "communication on the Internet", "working with information" and we can call it - "informed communication"; The sixth factor

refers to only one variable, namely K1 (self-control), which is why we do not assign it to any other factor, but call it a separate factor "Self-control".

Competency K6 (goal setting) has a low factor weight and is therefore dropped from further analysis, so the list of competencies becomes 19.

Six experts from the real estate industry participated in the application of the Delphi method. The competencies grouped into factors above were presented to the experts for evaluation and ranking within each factor, and a separate ranking of 19 competencies as a general list. The following table presents the competencies ranked by the experts in each factor separately, as this was done only for the first 5 factors, and the sixth factor is considered isolated, but necessary for the model, therefore it is not included in the study using the Delphi method.

Table 5. Ranking of competencies by factors obtained using the Delphi method

Rang	Factor 1 (expert)	Factor 2 (persuasion)	Factor 3 (Empathetic)	Factor 4 (interaction)	Factor 5 (digitalization)
1	Argumentation	Negotiation negotiation	Emotional interaction	teamwork	written communication
2	Problem solving	flexibility	Working with clients	verbal communication	communication in internet
3	Debating	Different approach to the interlocutor	Empathetic interaction	use of ICT	working with information

Source: Author's research

As a result of the experts' work using the Delphi method, a list of 11 competencies was developed.

Table 6. Final list of competencies after applying the Delphi method for expert assessment, and their relevance to the various factors

Competencies	Factor №
1. Argumentation	1
2. Negotiation	2
3. Emotional interaction	3
4. Teamwork	4
5. Written communication	5
6. Problem solving	1
7. Flexibility	2
8. Customer service	3
9. Oral communication	4
10. Internet communication	5
11. Self-control	6

Source: Author's research

The resulting list, after applying factorial statistical analysis and the Delphi method for expert assessment, was proposed to a general group of brokers and managers for final ranking.

After the managers and brokers ranked the 11 competencies, the results were processed and summarized. The following table presents the results of the final verification of the competencies and reaching the competency model.

Table 7. Competencies, descriptive statistics, and average rank score in the verification by real estate managers and brokers

	N	Minimum	Maximum	Mean	Std. Deviation
Arguing	20	3,00	11,00	7,4500	2,25890
Negotiation	20	1,00	8,00	3,2000	2,26181
Self-control	20	1,00	10,00	3,7500	3,04138
Emotional interaction	20	1,00	11,00	6,9000	2,69307
Teamwork	20	1,00	11,00	7,4500	2,32775
Written communication	20	1,00	10,00	5,4500	2,85574
Problem solving	20	1,00	11,00	6,7500	2,86310
Flexibility	20	2,00	11,00	7,8000	3,03662
Working with customers	20	1,00	5,00	2,8500	1,18210
Oral communication	20	2,00	10,00	4,9000	2,10013
Communication on the Internet	20	5,00	11,00	9,5000	2,11511

Source: Author's research

As can be seen from the table, the first 7 competencies with the highest ratings as significant for the work of the effective persuasive communicator (which means the lowest average rank scores) are the following:

1. Working with customers
2. Negotiations
3. Self-control
4. Oral communication
5. Written communication
6. Problem solving
7. Emotional interaction

The final competencies thus obtained encompass the following factors obtained at a previous stage of factor analysis; they are shown in Table 8.

Table 8. Final list of competencies (competence model)

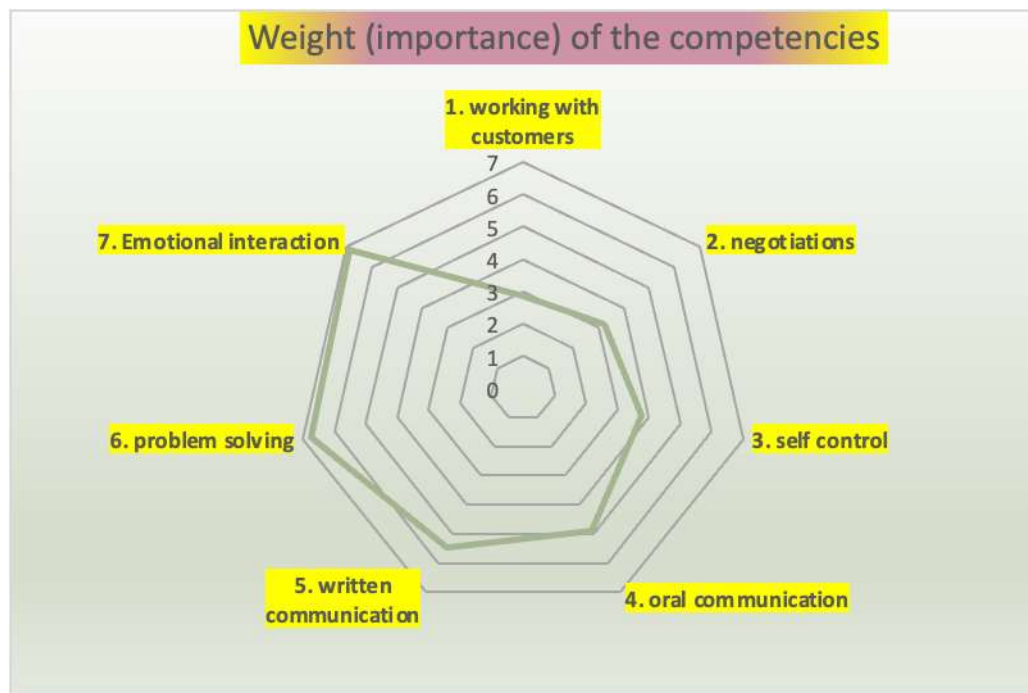
Competencies Weight	Competencies Weight	Competencies Weight	Competencies Weight
1. Customer Service	2,85	1	3 (empathetic)
2. Negotiation	3,2	2	2 (persuasion)
3. Self-Control	3,75	3	6 (self-control)
4. Oral Communication	4,9	4	4 (interaction)
5. Written Communication	5,45	5	5 (informed communication)
6. Problem Solving	6,75	6	1 (expert)
7. Emotional Interaction	6,9	7	3 (empathetic)

Source: Author's research

It turns out that all 6 factors are represented in the competency model. However, only factor №3 (empathic/empathy) is represented with two competencies, and specifically, these are “customer service” and “emotional interaction”.

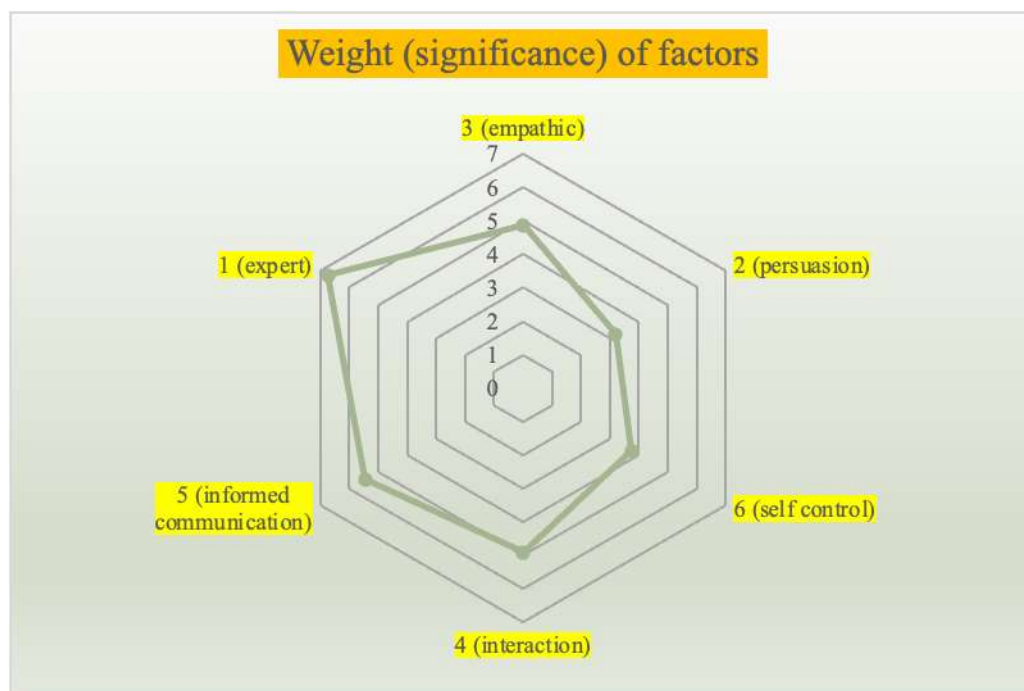
The following two figures are graphically presented: in Fig. 1, the competency model with a certain weight for each competency, and in Fig. 2, the competency model by factors, and for the factor “Empathy,” the factor weight was obtained by arithmetic mean estimation of the weight of the two competencies that are represented in it.

Figure 1. Competency model by competencies



As can be seen from the figure, the lowest values indicate the highest rank, i.e., the greatest weight (or importance) of the individual competences.

Figure 2. Competency model by factors



As can be seen from the figure, the highest weight is factor 3. "Persuasion", and the lowest weight is factor 1. Expert". Factor No. 6 "Self-control" and factor No. 3 "empathy" occupy the second and third place in importance, respectively.

The following table 9. lists the individual behaviors grouped by competencies for the position "real estate broker". For other positions to which the functional competency model of the "effective persuasive communicator" can be adapted, the behaviors listed below for each competency will be different. For example, for the position of PR, these behaviors will differ from the behaviors of the real estate broker, and also from the behaviors of the marketing specialist.

Table 9. Competencies and corresponding behaviors from the competency model of the effective persuasive communicator adapted for the position of "real estate broker".

Competencies	Behaviors. The broker has the following behaviors according to the competencies
1. Working with clients	1. identifies clients 2. interacts with clients by carrying out activities to familiarize clients with the properties they are interested in, conducting real estate inspections, with explanations from the broker; 3. explanations from the broker to clients about the prices and methods of financing and payment for the real estate; Prepares for the closing of transactions. 4. Assists the client in the final closing of a particular transaction
2. Negotiations	1. The broker conducts conversations with potential clients, trying to reconcile the differences in the demands for a fair price for the properties – on the one hand, the wishes of the seller, on the other hand, the wishes of the buyer. 2. The broker conducts price negotiations with both parties to the transaction by phone, email, and other technical means such as WhatsApp, Viber, etc..

Competencies	Behaviors. The broker has the following behaviors according to the competencies
3. Self-control	One carries out interactions and communications without losing control over their behavior and maintaining full control of their actions, oriented towards achieving a successful deal under favorable conditions for the agency they work for. 2. Performs daily self-training and communication skills training to be sure that in no situation of the day he will get out of control and will not fail any of the undertakings for which he is responsible in the mediation of the purchase and sale and or rental of real estate.
4. Oral communication	1. Makes efforts to observe business etiquette (speech etiquette) in every case of communication with clients, their direct and indirect managers, representatives of interested parties - investors, representatives of sellers and buyers (lawyers), consultants, clients: legal entities or individuals; 2. studies and improves his qualifications through training in oral communication, public speaking, and personal persuasion.
5. Written Communication	Performs self-training and qualification improvement activities to work with written text intended for written communication with a party via email, Viber, TikTok; Communicates in writing in different languages with clients, contractors, and distributors directly related to his work as a real estate broker
6. Solving Problems	Works on resolving problems that have arisen in the activity of offering and mediating in real estate transactions
7. Emotional interaction	Develops personal qualities of sympathy by training one's own abilities to successfully understand the thoughts and feelings of another person and their intentions, motivations, and values, which also means a greater emotional connection with clients.

The procedure for testing the competency model for other professions and specialties that imply an unconditional need for effective persuasive communication is associated with many pitfalls and obstacles. Regardless of everything, the current competency model is close to the job description of the profession "real estate broker" and its use will significantly increase the capacity of real estate agencies, both in recruiting personnel, but also in the development, adaptation and training of these employees.

7. LIMITATIONS OF THE STUDY

Despite the study's methodological rigor, several limitations should be acknowledged. First, the research is conducted within the specific professional context of real estate brokerage in Bulgaria, which may limit the generalizability of the findings to other national or regulatory environments. Although the competency model is designed as a functional and adaptable framework, its empirical validation remains context-dependent.

Second, the study relies partly on self-assessment data provided by real estate brokers, which may be influenced by social desirability bias or subjective perceptions of competence. While this limitation is partially mitigated through triangulation with expert evaluations and managerial assessments, it cannot be eliminated.

Third, the cross-sectional design captures competencies at a single point in time. Longitudinal studies could provide deeper insights into the development and stability of persuasive communication competencies over the course of professional careers. Recognizing these limitations contributes to greater transparency and offers directions for future research.

CONCLUSION

As a functional type of competency model, the above-created model for an effective persuasive communicator with seven competencies, namely:

1. Working with customers
2. Negotiation
3. Self-control
4. Oral communication
5. Written communication
6. Problem solving
7. Emotional interaction

It can be tested for different positions, but also for roles. There are many professional fields and professions in which there are positions that involve persuasive communication in the foreground. Some of them are not related to sales, while others relate to professions close to politics. In all cases, when testing the competency model presented above, the procedures for comparing the opinions of employees (workers) in the organization with their leaders, managers, directors, etc. should be followed.

The proposed functional competency model has several practical implications for real estate organizations and other sectors where persuasive communication is essential. First, the model can be directly applied in recruitment and selection processes by serving as a competency-based profile against which candidates' communication behaviors can be assessed through structured interviews, role-play simulations, and assessment centers.

Second, real estate agencies may use the model as a framework for targeted training and professional development programs. For example, brokers demonstrating lower levels of self-control or emotional interaction could be enrolled in specialized training focused on emotional regulation and client-oriented communication. Similarly, negotiation and problem-solving competencies may be enhanced through scenario-based learning and mentoring.

Third, the model provides a foundation for performance appraisal and career development systems by linking observable communication behaviors to organizational outcomes, such as client satisfaction, deal-closure rates, and long-term client retention. Beyond real estate brokerage, the model may be adapted to other professional roles-such as sales consultants, financial advisors, or public relations specialists-by contextualizing the behavioral indicators associated with each competency.

After it is in effect for a specific period of time (for example, 2 years), the model is subject to updating or modernization in response to the emergence of new requirements for positions, roles, and functional duties. In the event of a drastic change in environmental conditions, the functional boundaries of the "effective persuasive communicator" function may change, requiring a complete re-evaluation of the steps and the definition of new key competencies in line with the new conditions.

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