Motivational Factors Contributing to Teachers' Job Satisfaction and Attraction to Pedagogical Work in Kalvarija Municipality, Lithuania

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ABSTRACT

Aim. The aim of the study is to empirically assess the motivational structure of teachers working in Kalvarija municipality by analysing the relative importance of internal and external motivational factors. The study examines teachers' priorities regarding working conditions,

municipal support measures, and professional development opportunities, as well as their attitudes toward the application of generative artificial intelligence in pedagogical practice.

Methods. A standardised questionnaire based on established motivation theories was used. The instrument consisted of 114 items covering sociodemographic characteristics, motivational factors, working conditions, recognition, professional development, and attitudes towards artificial intelligence. The survey was administered online in June 2025. Data from 86 teachers was analysed using descriptive statistics, non-parametric tests, reliability analysis, and ranking methods.

Results. The findings show that teachers' motivation is primarily supported by opportunities for professional development, meaningful work, and recognition. According to Herzberg's model, internal motivators were rated highest, whereas external hygiene factors such as job security and health insurance received lower evaluations. Ranking analyses revealed stable priority patterns (Kendall's $W = 0.31–0.56$; Friedman $p < 0.001$).

Conclusions. The results of the study indicate that teachers' motivation in Kalvarija municipality is shaped by a combination of internal motivators and external hygiene factors. Job satisfaction and professional involvement are most strongly supported by opportunities for professional development, recognition, and a clear sense of meaning in pedagogical work.

Practical application. The instrument can be adapted for use in other regions and countries and provides guidance for municipalities seeking to improve teacher motivation.
Keywords: teachers, motivation, pedagogical work, artificial intelligence, Herzberg's model

Introduction

In Lithuania, considerable attention is devoted to the development of strategies aimed at increasing the attractiveness of teaching careers in educational institutions, as demographic and economic changes pose significant challenges to the education system. One of the most pressing issues is the steadily increasing proportion of older teachers, alongside the relatively low involvement of young people in the teaching profession. Similar challenges are observed in other European countries. It should be noted that fewer than 15% of graduates from initial teacher education programmes choose to pursue a teaching career (European Commission: Directorate-General for Education, Youth, Sport and Culture, 2025). According to data from the Užimtumo tarnyba (2024), the demand for pre-school and primary education teachers—particularly those qualified to work with pupils with special educational needs—is growing substantially, especially in south-western Lithuania. Furthermore, due to the ageing of the teaching workforce, the need for pre-school and primary education teachers remains

pronounced (Užimtumo tarnyba, 2024). The European Commission (2025) emphasised that the Lithuanian education system faces major challenges, including a shortage of teachers and an ageing teaching community, with as many as 40% of teachers being over the age of 55, which represents the highest proportion in the European Union.

At the same time, the situation in Lithuania is not uniform across regions. While some municipalities experience acute shortages of teachers, others face relatively stable staffing conditions. In response to these regional disparities, national surveys have been conducted to better understand and address teacher shortages in specific areas of the country. This article presents the results of the national study entitled "motivation of general education teachers for pedagogical work and attraction to work in Kalvarija Municipality" (Žibėnienė et. al., 2025). Kalvarija Municipality is characterised by a shortage of general education teachers, particularly in subjects such as mathematics, German, Russian, and history. Under these circumstances, creating attractive working conditions is essential not only for retaining current teachers but also for attracting new professionals, especially given that some teachers commute from other regions. According to studies conducted by Kalvarija Municipality, fuel reimbursement is among the measures most valued by teachers; however, implementing such support places a substantial financial burden on the municipality, particularly in the context of shortages in other public sector positions. Until 2020, Kalvarija Municipality also faced a shortage of pre-school teachers; however, data from a 2023 survey indicate that this shortage has been replaced by a surplus, raising concerns that some pre-school teachers may face job insecurity in the near future. According to the Kalvarija Municipality Priority List of Educational Support Specialists and Teachers for the 2025–2026 school year, priority needs include mathematics teachers, technology teachers, German language teachers, special educators, speech therapists, and psychologists. Persistent teacher shortages negatively affect the quality of education, while also increasing stress and workload for existing teachers, who are often required to take on responsibilities beyond their preferred capacity. (Žibėnienė et al., 2025)

Against this background, Kalvarija Municipality faces two interrelated challenges: how to motivate and retain existing general education teachers and how to attract new professionals to the general education system. Accordingly, the aim of this study is to explore effective ways to motivate general education teachers for pedagogical work and to identify factors that may attract new employees to work in Kalvarija Municipality. More specifically, the objective of the study is to empirically assess the motivational factors of teachers in Kalvarija Municipality and to determine which aspects most strongly contribute to teachers' job satisfaction, professional involvement, and attraction to pedagogical activities.

Research Methodology and Organisation

In June 2025, a questionnaire survey of teachers employed in Kalvarija municipal schools was conducted. A standardised questionnaire was selected as the main research instrument and developed on the basis of established theoretical models of employee motivation. The questionnaire consisted of 114 questions grouped into several thematic blocks: sociodemographic characteristics, motivational factors, working conditions, recognition, professional development, and attitudes toward artificial intelligence. The questionnaire was designed using the Qualtrics platform and distributed to respondents via e-mail in June 2025. A total of 86 completed questionnaires were received. Given that Kalvarija municipality employs slightly more than 100 teachers, this response rate can be considered representative. The collected data was analysed using descriptive statistics, correlation and factor analysis, while responses to open-ended questions were systematised into categories, subcategories, and supporting statements.

The questionnaire was constructed on the basis of both classical and contemporary theories of motivation and adapted to the specific context of pedagogical activity. The theoretical framework of the study is primarily grounded in Herzberg's two-factor theory of motivation (Herzberg et al., 1959) and Self-Determination Theory (SDT) (Deci & Ryan, 1985; Ryan & Deci, 2000), which together form a widely used conceptual basis for research on teacher motivation. This framework was further complemented by the Unified Theory of Acceptance and Use of Technology (UTAUT) model (Venkatesh et al., 2003), applied to the analysis of artificial intelligence adoption, as well as by recent research on the Generative AI Acceptance Scale (GAIAS) (Yılmaz et al., 2023).

In accordance with Frederick Herzberg et al.'s (1959) model, the questionnaire structure included both motivating (internal) and hygiene (external) factors. Motivating factors encompassed achievement, recognition, responsibility, interest in work, and opportunities for professional development, while hygiene factors included working conditions, remuneration, workplace safety, institutional policies, and relationships with school management and colleagues. These dimensions were operationalised in questionnaire items Q26–Q55, covering the core components of Herzberg's theory (items 1M–14M representing motivators and items 15H–30H representing hygiene factors). This structure corresponds to reconstructed versions of the Herzberg Motivation–Hygiene scale used in previous empirical studies (Ajikere, 2024; Tan et al., 2011).

Self-Determination Theory served as an overarching conceptual framework, particularly in the interpretation of internal motivation related to the basic psychological needs for autonomy, competence, and relatedness. Although the questionnaire did not include direct items from the Intrinsic Motivation Inventory (IMI), these SDT dimensions are indirectly reflected in items addressing recognition, professional development, and opportunities for teachers' growth, which form part of the Herzberg motivation block.

The section of the questionnaire focusing on the use of artificial intelligence (items Q103–Q114) was developed on the basis of the UTAUT model and the structure of the Generative AI Acceptance Scale (GAIAS). This part of the instrument assesses teachers' attitudes towards the application of generative AI tools in pedagogical practice across several dimensions: Performance Expectancy (Q103–Q109), Effort Expectancy (Q110), Facilitating Conditions (Q111–Q112), and Social Influence (Q113–Q114).

The remaining groups of questionnaire items (Q56–Q102) consisted of ranking questions related to motivation measures implemented by the municipality and schools, improvements in working conditions, and opportunities for professional development. As these items were designed to assess priorities rather than latent psychological constructs, they are not treated as standardised psychometric scales. Overall, the questionnaire integrates Herzberg's motivation theory, the conceptual framework of Self-Determination Theory, and the UTAUT/GAIAS model, thereby forming a multidimensional research instrument that captures both traditional aspects of teacher motivation and emerging technological challenges.

Throughout the research process, fundamental ethical principles were strictly observed. Participation in the study was voluntary, respondents were informed about the purpose of the research, and they were guaranteed anonymity and confidentiality. Participants had the right to withdraw from the study at any stage without any negative consequences.

Results of the Study

Characteristics of the Study Participants

The vast majority of respondents either live or work in Kalvarija municipality (95.0%), while only isolated cases were recorded in neighbouring municipalities, namely Marijampolė (2.0%), Alytus city (1.0%), and Kaunas district (1.0%). This distribution indicates a strong local focus of the survey and suggests that the sample adequately represents the pedagogical community of the municipality (see Table 1).

Table 1

Respondents by Key Demographic Characteristics

Question	*Category*	*n*	*%*
Municipality (live/work)	Kalvarija Municipality	82	95.0
	Marijampolė Municipality	2	2.0
	Alytus City Municipality	1	1.0
	Kaunas District Municipality	1	1.0
School type	Gymnasium	41	48.0
	Basic school	44	51.0
	Primary school	1	1.0
Main workplace (FTE)	Full-time (1 FTE)	32	37.0
	More than 1 FTE	22	26.0
	Less than 1 FTE	32	37.0
Qualification category	Teacher	10	12.0
	Senior Teacher	40	47.0
	Methodologist	29	34.0
	Expert	3	3.0
	Other	4	5.0
Gender	Female	77	90.0
	Male	8	9.0
	Prefer not to say	1	1.0
Transport to work	By car	57	66.0
	On foot	25	29.0
	Public transport	3	3.0
	Other means	1	1.0
Age	31–35	2	2.0
	36–40	7	8.0
	41–45	8	9.0
	46–50	18	21.0
	51+	51	59.0
Home–work distance	≤ 1 km	31	36.0
	≤ 5 km	19	22.0
	6–10 km	7	8.0
	11–15 km	7	8.0
	≥ 16 km	22	26.0

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

According to the type of educational institution, the respondents were distributed as follows: 51.0% work in basic schools, 48.0% in gymnasiums, and 1.0% in primary schools. This structure encompasses all levels of general education present in the municipality and allows for the comparison of teachers' experiences across different types of schools.

With regard to workload and main workplace, the distribution of respondents was relatively balanced. Specifically, 37.0% of teachers work full-time, an equal proportion (37.0%) work less than one full-time equivalent, and 26.0% hold more than one job. These results reflect a flexible employment pattern and indicate that a considerable share of teachers combine multiple positions or workloads.

The distribution of qualification categories reveals a high level of professional preparation among respondents. Senior teachers constitute the largest group (47.0%), followed by methodological teachers (34.0%), teachers (12.0%), and experts (3.0%), while 5.0% of

respondents indicated another qualification category. Such a structure suggests a mature and experienced professional community within the municipality's education system.

The gender structure of the sample is clearly dominated by women, who account for 90.0% of respondents, while men represent 9.0%; 1.0% of participants did not indicate their gender. This distribution corresponds to the general gender pattern observed in the Lithuanian general education sector.

Analysis of age distribution shows a predominance of older teachers in the sample. Teachers aged 51 years and older account for 59.0% of respondents, those aged 46–50 years represent 21.0%, respondents aged 41–45 years make up 9.0%, those aged 36–40 years account for 8.0%, and only 2.0% are aged 31–35 years. This indicates that the teaching workforce in the municipality is largely composed of experienced professionals, while the proportion of younger teachers remains relatively small.

The distance between respondents' place of residence and their workplace reflects patterns typical of smaller municipalities. A total of 36.0% of teachers live within 1 km of their workplace, 22.0% within 5 km, 8.0% at a distance of 6–10 km, 8.0% at a distance of 11–15 km, and 26.0% live 16 km or more from their workplace. Thus, while a substantial proportion of teachers reside close to their schools, a significant share commute from more distant locations.

Regarding commuting methods, 66.0% of respondents reported travelling to work by car, 29.0% commute on foot, 3.0% use public transport, and 1.0% indicated other means of transportation. This distribution reflects the typical mobility pattern of a small municipality, characterised by a predominance of individual transport and relatively short commuting distances.

Motivating Factors for Teachers

In order to assess the internal consistency of the Herzberg two-factor scale and to examine differences between groups of respondents, Cronbach's α reliability coefficients were calculated and non-parametric Kruskal–Wallis tests were applied (see Table 1).

Table 2

Reliability Estimates of the Herzberg Scale

Scale	*α*	*Number of variables*
Herzberg (Visa)	0,96	30
Motivators	0,92	16
Hygienic	0,94	14

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

According to widely accepted methodological guidelines (George & Mallery, 2016), a Cronbach's α coefficient greater than 0.9 indicates an excellent level of internal reliability. This result confirms that the scale demonstrates high internal consistency, allowing for a reliable interpretation of the findings. Furthermore, both subscales—motivating factors and hygiene factors—are sufficiently reliable to be used in subsequent group comparisons and correlation analyses.

Table 3 reports central-tendency metrics for the Herzberg motivation items after recoding response options to a 1–5 Likert scale (1 = 'strongly disagree', 5 = 'strongly agree'). For each statement we present the median (Q2), lower and upper quartiles (Q1, Q3), and n (valid responses). A higher median indicates stronger agreement—and thus greater perceived importance of the respective motivational factor—while the interquartile range (Q3–Q1) reflects response dispersion (smaller IQR = greater consensus). Top-/bottom-box columns are omitted to avoid mixing metrics.

Table 3
Assessment of Teachers' Motivation Factors

Statement	*n*	*Median (Q2)*	*Q1*	*Q3*	*IQR (Q3–Q1)*
I can improve my qualifications in various training activities.	78	5	4	5	1
I am proud to work at this school because it recognizes my achievements.	78	4	3	5	2
I feel satisfied with my work because it gives me a sense of satisfaction.	78	4	3	5	2
I feel that I have contributed to the achievements and positive changes of my school.	78	4	3	5	2
I am appreciated for a job well done.	78	4	3	5	2
My achievements are recognized by my manager, managers.	78	4	3	5	2
I feel or receive information that students praise me for my good work.	78	4	3	5	2
There are clear opportunities to be promoted, to get a higher qualification category.	78	4	3	5	2
My activities are interesting and full of challenges.	78	4	3	5	2
Pedagogical work gives me a sense of satisfaction.	78	4	3	5	2
I enjoy the activities I do every day.	78	4	3	5	2
Work creates opportunities for me to learn new skills.	78	4	4	5	1
The school supports my further learning.	78	4	3	5	2
The school's rules and procedures are clearly explained.	78	4	3	5	2
I get along well with my co-workers.	78	4	4	5	1
My colleagues help me when I need it.	78	4	3	5	2

Statement	*n*	*Median (Q2)*	*Q1*	*Q3*	*IQR (Q3–Q1)*
My boss treats me with respect.	78	4	3	5	2
I get constructive feedback from my manager.	78	4	3	5	2
I can also contact the manager for personal questions.	78	4	3	5	2
The physical working environment is comfortable.	78	4	3	5	2
The school provides the necessary tools for the work.	78	4	3	5	2
I work harder when there is an opportunity to earn more money.	78	4	3	5	2
The school's staff support policy is fair and consistent.	78	4	3	4	1
Management effectively conveys expectations.	78	4	3	4	1
Monetary reward has a significant impact on my job choice.	78	4	3	4	1
The results of pedagogical activities create opportunities to accelerate my career growth.	78	3	3	4	1
My work is assured in the near future.	78	3	2	4	2
I will not lose my job due to economic changes.	78	3	2	4	2
A friendly atmosphere prevails among the employees.	78	3	3	4	1
The school offers health insurance services.	78	2	1	3	2

Source. Calculations based on data from Žibėnienė et. al., 2025, unpublished report.

The results indicate that dimensions related to professional growth and competence development received the highest evaluations by median. Teachers most frequently reported a median (Q2) at or above 4, with Q1–Q3 typically spanning the upper range of the scale, for statements such as having opportunities to learn new skills and to improve their qualifications. These findings align with Herzberg's motivators (growth and achievement), suggesting a well-established base of internal motivation among respondents.

The social climate and interpersonal relationships within schools were also evaluated positively: items on collegial relations, respectful leadership, and positive day-to-day experience generally showed a median around 4, with IQRs (Q3–Q1) that were either narrow or moderate. Together, these patterns point to sustained engagement in daily tasks and reinforce the perceived meaningfulness of pedagogical work.

Indicators related to recognition and management practices occupied an intermediate position by median (typically between 3 and 4). Statements on clarity of rules, communication of expectations, and formalised recognition tended to have median values in the mid-range and moderate IQRs, suggesting that procedural consistency and transparency are present but leave room for further strengthening.

Assessments of career advancement opportunities and material incentives were more moderate by median (often between 3 and 3.5), while job-security-related aspects were evaluated lower (medians closer to 3, with some items showing wider IQRs). Among external guarantees, health insurance exhibited the lowest median and comparatively broader dispersion. In line with Herzberg's theory, these elements function as hygiene factors: their presence does not directly elevate motivation, but their insufficiency can increase dissatisfaction. Consequently, strengthening institutional guarantees and clarifying career pathways could further improve the overall motivational profile.

To examine differences between groups of respondents, non-parametric Kruskal–Wallis and Mann–Whitney U tests were applied. The analysis revealed a consistent pattern of statistically significant differences related to the type of school, mode of commuting to work, and, in some cases, age groups. Teachers working in primary schools tended to report more positive evaluations of the organisational climate, clarity of rules, and effectiveness of management communication compared with teachers employed in gymnasiums.

Differences were also observed with respect to commuting methods. Teachers who commute by car reported slightly higher evaluations of collegial relationships and opportunities for qualification improvement than those who commute on foot. In terms of age-related differences, respondents aged 36–40 years assigned the highest value to municipal and school-level support for further education, whereas lower evaluations of this support were observed among teachers aged 41–45 and 46–50 years.

All results were obtained using non-parametric statistical procedures (Kruskal–Wallis and Mann–Whitney U tests) with false discovery rate (FDR) correction applied to control for multiple comparisons. Statistically significant differences in mean evaluations across respondent groups are presented in Table 4.

Table 4

Statistically Significant Differences in the Mean Responses between Groups of Respondents

Statement	*Group*	*n*	*Average*	*SD*	*Test*	*p*	*q_FDR*	*Effect size (δ or ε²)*
I can improve my qualifications in various training activities.	Gymnasium	36	3.86	1.10	Mann–Whitney U	0.016077	0.040442	δ = −0.295393
	Basic	41	4.29	1.23				
	Initial	1	5.00	-				
The school's staff support policy is fair and consistent.	Gymnasium	36	3.14	1.13	Mann–Whitney U	0.001294	0.003883	δ = −0.411247
	Basic	41	3.93	1.08				

Statement	*Group*	*n*	*Average*	*SD*	*Test*	*p*	*q_FDR*	*Effect size (δ or ε²)*
	Initial	1	5.00	—				
The school's rules and procedures are clearly explained.	Gymnasium	36	3.44	1.11	Mann–Whitney U	0.014581	0.043743	δ = −0.310976
	Basic	41	4.00	1.12				
	Initial	1	5.00	—				
Management effectively conveys expectations.	Gymnasium	36	3.28	1.03	Mann–Whitney U	0.006226	0.018679	δ = −0.349593
	Basic	41	3.88	1.19				
	Initial	1	5.00	—				
I get along well with my co-workers.	Gymnasium	36	3.72	0.97	Mann–Whitney U	0.001933	0.005799	δ = −0.384824
	Basic	41	4.29	1.01				
	Initial	1	5.00	—				
My colleagues help me when I need it.	Gymnasium	36	3.53	1.03	Mann–Whitney U	0.000521	0.001562	δ = −0.436992
	Basic	41	4.29	0.87				
	Initial	1	5.00	—				
A friendly atmosphere prevails among the employees.	Gymnasium	36	2.81	0.86	Mann–Whitney U	0.000002	0.000005	δ = −0.614499
	Basic	41	3.95	1.07				
	Initial	1	5.00	—				
I can improve my qualifications with various training activities.	On foot	21	3.76	1.14	Mann–Whitney U†	0.026962	0.040442	δ = −0.304233
	By car	54	4.24	1.20				
	Public	3	4.00	1.00				
I get along well with my co-workers.	On foot	21	3.71	1.01	Mann–Whitney U†	0.023959	0.035939	δ = −0.315697
	By car	54	4.19	1.03				
	Public	3	3.67	0.58				
My colleagues help me when I need it.	On foot	21	3.38	0.97	Mann–Whitney U†	0.001167	0.001751	δ = −0.460317
	By car	54	4.17	0.97				
	Public	3	4.00	1.00				
The school supports my further learning.	31–35 years old.	2	4.00	0.00	Kruskal–Valais	0.005744	0.017232	ε² = 0.132504
	36–40 years old.	7	4.71	0.76				
	41–45 years old.	8	3.12	1.36				
	46–50 years old.	15	3.00	1.31				
	51+ years old	46	3.78	1.17				

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

As indicated by the values presented in the table, opportunities for qualification improvement are perceived as more accessible and effectively implemented in basic schools than in gymnasiums. This difference is reflected in evaluations related to access to training, time allocation for professional development, and encouragement provided by school management. In addition, support practices within these schools—including established procedures and support mechanisms—are assessed more favourably. Teachers more often report that processes are clear and that communication is transparent. Furthermore, leadership communication, organisational climate, cooperation, and mutual assistance receive more positive evaluations in primary schools. These differences may be explained by structural characteristics typical of smaller educational organisations, such as shorter communication channels, more cohesive educator communities, closer interpersonal relations, and a lower degree of task fragmentation.

Working Conditions of Teachers

This section presents a summary of the results obtained from the ranking-based question blocks. The following indicators were used in the analysis: mean rank (with lower values indicating higher motivational importance), median rank, standard deviation of ranks, the percentage of first-place rankings (top1_pct), the percentage of rankings within the top three positions (top3_pct), and Borda scores (calculated as $k - rank$, where higher values indicate greater motivational importance). In addition, Kendall's coefficient of concordance (W) was used to assess the level of agreement among respondents, and the Friedman test was applied to evaluate the statistical significance of differences between ranked items.

For the block assessing improvements in working conditions (Q56–Q69), Kendall's W reached 0.559, indicating a medium-to-high level of agreement among respondents, while the Friedman test yielded a statistically significant result ($p < 0.001$). This confirms that the observed differences in rankings are not random (see Tables 6 and 7).

An analysis of teachers' working conditions shows that the highest priority is given to material resources directly related to everyday professional activities, such as the availability of a computer in the classroom, access to printing and paper, and regular provision of essential teaching tools. In contrast, procedural or organisational measures, including functions such as mediation, are assigned lower priority by respondents.

Table 5

Summary of Questions Q56 to Q69

Tool	*mean_rank*	*median_rank*	*sd_rank*	*top1_pct*	*top3_pct*	*borda_mean*	*n_nonnull*
Computer in the classroom (optimal parameters and accessories)	2.397059	2	1.75465	0.3125	0.572917	11.602941	68
Unlimited access to printer and paper	3.970588	3	2.625765	0.041667	0.395833	10.029412	68
Monthly Basket of Stationery	4.5	4	2.440333	0.041667	0.291667	9.5	68
Monthly Basket of Tools for the Educational Process	4.573529	4	2.068356	0.03125	0.197917	9.426471	68
Regular educational and health programmes	5.176471	5	2.859606	0.09375	0.21875	8.823529	68
Posts of student assistants according to needs	6.235294	7	2.834319	0.052083	0.145833	7.764706	68
Financing of training for the development of qualifications	6.941176	7	2.97192	0.041667	0.09375	7.058824	68
Discounts from local manufacturers	8.970588	9	2.801762	0.010417	0.020833	5.029412	68
Mentor for Beginner Teachers	9.044118	9	2.59985	0	0.020833	4.955882	68
Teachers' Reflection Groups	9.529412	10.5	2.924271	0.020833	0.020833	4.470588	68
Free legal consultation	9.602941	11	2.797332	0	0.03125	4.397059	68
Tribute events for teachers	9.676471	10	2.836022	0.020833	0.041667	4.323529	68
Municipal mediator between teacher and administration	11.191176	12.5	3.043257	0.010417	0.041667	2.808824	68
Other	13.191176	14	2.87167	0.03125	0.03125	0.808824	68

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

Table 6

Q56-Q69 Tests

Indicator	*Meaning*
Kendall's W	0.559168
Friedman p	0
Number of respondents	68
Number of objects	14

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

Teachers' Journey to Work

This subsection examines teachers' commuting arrangements and the perceived importance of different travel-related support measures (Q70–Q76). The ranking analysis revealed statistically significant differences between the evaluated instruments, with Kendall's coefficient of concordance reaching 0.496 and the Friedman test indicating significance ($p < 0.001$), thus demonstrating a moderate level of agreement among respondents (see Tables 7 and 8).

Table 7
Q70-Q76 Summary

Tool	*mean_rank*	*median_rank*	*sd_rank*	*top1_pct*	*top3_pct*	*borda_mean*	*n_nonnull*
Relief for transport costs	2.014706	2	1.165328	0.28125	0.645833	3.985294	68
Partial reimbursement of fuel or tickets	2.338235	2	1.451816	0.302083	0.5	3.661765	68
Discounts on car maintenance	3.338235	3	1.299946	0.03125	0.416667	2.661765	68
Provision of a bicycle or other means	3.764706	4	1.317139	0.0625	0.270833	2.235294	68
Reimbursement of taxi costs up to 50 €/year	3.823529	4	1.006563	0.010417	0.260417	2.176471	68
Other	5.720588	6	1.019886	0.020833	0.03125	0.279412	68

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

Table 8
Q70 to Q76 Tests

Indicator	*Meaning*
Kendall's W	0.496441
Friedman p	0
Number of respondents	68
Number of objects	6

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

As shown in Tables 7 and 8, measures aimed at reducing direct travel costs—particularly partial reimbursement of fuel or public transport tickets—were ranked as the most important. This pattern is likely influenced by the fact that the majority of teachers commute to work using their own cars. In contrast, compensation for taxi services and options grouped under "other" were assigned relatively low priority and were not considered significant motivational measures.

Municipal Support and Recognition of Teachers

The assessment of measures reflecting Kalvarija Municipality's attention to teachers also revealed statistically significant differences in respondents' rankings (Kendall's W = 0.466; Friedman $p < 0.001$), indicating varying levels of importance attributed to different instruments (see Tables 9 and 10). The results clearly show that financial incentives—both equal rewards for performance and incentives targeted toward municipal priorities—are considered substantially more important than symbolic forms of recognition, such as public greetings or ceremonial acknowledgements.

Table 9

Shipping: Table. Q77-Q84 Summary

Tool	*mean_rank*	*median_rank*	*sd_rank*	*top1_pct*	*top3_pct*	*borda_mean*	*n_non null*
Equal financial incentives for good results	2.102941	2	1.2234	0.28125	0.635417	4.897059	68
Financial incentives for municipal priorities	3.235294	3	1.394206	0.072917	0.395833	3.764706	68
Annual Teacher Award	3.279412	3	1.726402	0.135417	0.395833	3.720588	68
Publicity of good practice online	4.102941	4	1.30601	0.03125	0.1875	2.897059	68
Targeted response by methodological groups	4.102941	5	1.885844	0.125	0.270833	2.897059	68
Public greeting for beginner teachers	4.308824	5	1.703879	0.052083	0.229167	2.691176	68
Other	6.867647	7	0.770819	0.010417	0.010417	0.132353	68

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

Table 10

Q77 to Q84 Tests

Indicator	*Meaning*
Kendall's W	0.465815
Friedman p	0
Number of respondents	68
Number of objects	7

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

A separate analysis focusing on the recognition of teachers' competence (Q85–Q90) further confirmed the presence of significant differences between evaluated measures (Kendall's W = 0.515; Friedman $p < 0.001$; see Tables 11 and 12). Two main directions emerged as the most motivating from the perspective of respondents. The first relates to strengthening legal and organisational clarity, particularly through a clearer definition of

teachers' rights in communication with parents. The second concerns paid forms of professional participation, including advisory roles and involvement in innovation-oriented teacher groups.

Table 11
Q85-Q90 Summary

Tool	*mean_rank*	*median_rank*	*sd_rank*	*top1_pct*	*top3_pct*	*borda_mean*	*n_nonnull*
Paid group of teachers – advisory voice	2.205882	2	1.000878	0.197917	0.614583	2.794118	68
Teacher's rights in communication with parents are more clearly defined	2.382353	2	1.316139	0.291667	0.479167	2.617647	68
Paid Teacher Group for Educational Innovation	2.5	3	1.043816	0.145833	0.583333	2.5	68
A paid group of teachers to initiate well-being	2.941176	3	1.020424	0.072917	0.4375	2.058824	68
Other	4.970588	5	0.242536	0	0.010417	0.029412	68

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

Table 12.
Q85 to Q90 Tests

Indicator	*Meaning*
Kendall's W	0.514879
Friedman p	0
Number of respondents	68
Number of objects	5

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

Support for Teachers' Professional Development

The analysis of measures supporting teachers' professional development (Q91–Q102) revealed statistically significant differences in the perceived importance of individual instruments. Kendall's coefficient of concordance reached 0.314, indicating a relatively lower level of agreement among respondents, while the Friedman test confirmed that these differences are statistically significant ($p < 0.001$).

From the respondents' perspective, the highest priority is given to the development of long-term competencies, particularly through the financing of retraining studies, as well as to the availability of flexible options for selecting and participating in professional development courses. In contrast, measures such as internships and voucher-based support mechanisms are

perceived as niche instruments and are assigned comparatively lower importance. Detailed results of this analysis are presented in Tables 13 and 14.

Table 13

Summary Q91 to Q102

Tool	*mean_rank*	*median_rank*	*sd_rank*	*top1_pct*	*top3_pct*	*borda_mean*	*n_nonnull*
Financing of retraining studies	3.352941	2	2.763108	0.25	0.479167	8.647059	68
Possibility to offer and participate in courses free of charge	4.661765	5	2.531063	0.104167	0.260417	7.338235	68
Financing of studies in educational fields	5.088235	4.5	2.730345	0.041667	0.25	6.911765	68
Scholarships for students in the field of education	5.176471	5	2.533013	0	0.25	6.823529	68
Annual €100 voucher for qualification	6.088235	6	2.5318	0.041667	0.114583	5.911765	68
Vouchers for educational events	6.720588	7	2.555916	0.03125	0.083333	5.279412	68
Special Events for Beginning Teachers	6.852941	7	2.727772	0.010417	0.03125	5.147059	68
Free consultations on educational issues	6.867647	8	3.114264	0.03125	0.166667	5.132353	68
Paid internship in another country	7	9	3.757579	0.09375	0.197917	5	68
Free subject consultation	7.176471	9	3.98857	0.083333	0.177083	4.823529	68
Paid internship in another institution	7.441176	9	2.923821	0.020833	0.114583		4.558824
Other	11.573529	12	1.747631	0	0		0.426471

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

Table 14

Q91-Q102 Tests

Indicator	*Meaning*
Kendall's W	0.313566
Friedman p	0
Number of respondents	68
Number of objects	12

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

Summary of Key Findings on Motivation Measures

Overall, the results of the study highlight several consistent priorities. First, material resources directly supporting everyday pedagogical activities—such as classroom infrastructure, access to printing, and transport-related benefits—are of primary importance. Second, empowerment and recognition play a crucial role, especially through clearly defined teacher rights and paid collective forms of participation. Third, the development of long-term competencies, particularly through the financing of retraining and the availability of flexible learning opportunities, is identified as a strategic priority. The observed levels of concordance (Kendall's W ranging approximately from 0.31 to 0.56) indicate medium to high agreement among respondents, while Friedman test results ($p < 0.001$ across all ranking blocks) confirm the stability of these priorities. Based on these findings, a recommended basket of priorities can be formulated: (a) classroom infrastructure; (b) transport compensation arrangements; (c) uniform and targeted financial incentives; (d) clarity of rights and paid participation platforms; and (e) long-term competence development through retraining.

Teachers' Attitudes Toward the Application of Artificial Intelligence in Pedagogical Activities

This section of the questionnaire (Q103–Q114) was designed to assess teachers' perceptions of the application of generative artificial intelligence (AI) in their professional activities. Responses were collected using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"), with higher values indicating stronger approval. The analysis is grounded in the UTAUT/GAIAS framework and encompasses five dimensions: Performance Expectancy (PE; Q103–Q109), Effort Expectancy (EE; Q110), Facilitating Conditions (FC; Q111–Q112), Social Influence (SI; Q113), and Learning Intention (LI; Q114).

The reliability of the AI-related scales was assessed using Cronbach's α coefficient, a commonly applied indicator of internal consistency in psychometric research. Values of $\alpha \geq 0.9$ indicate very high reliability, $0.8 \leq \alpha < 0.9$ indicate good reliability, $0.7 \leq \alpha < 0.8$ indicate acceptable reliability, while values below 0.7 suggest limited or insufficient reliability. In this study, the Performance Expectancy (PE) scale achieved a Cronbach's α of 0.908, demonstrating very high internal consistency and indicating that the items reliably capture teachers' perceptions of AI-related benefits. In contrast, the reliability of the Facilitating Conditions (FC) scale was lower ($\alpha = 0.527$), suggesting greater variability in teachers' assessments of organisational support and infrastructure for AI use (see Tables 15 and 16).

Table 15
Teachers' Approach to the Application of Generative Artificial Intelligence (AI) in Professional Activities

Statement	*n*	*Average*	*SD*	*Median*	*Top-box (4–5) %*	*Bottom-box (1–2) %*
AI applications are useful in my daily professional life.	66	3.82	1.02	4.0	60.6	9.1
I would like to improve my ability to use AI applications.	66	3.77	1.25	4.0	62.1	15.2
Learning how to use AI applications was easy for me.	66	3.76	1.02	4.0	66.7	12.1
The use of AI increases the efficiency of my professional activities.	66	3.71	1.08	4.0	57.6	12.1
Using AI makes my professional life easier.	66	3.7	1.12	4.0	62.1	15.2
Using AI increases my chances of achieving goals while working as a teacher.	66	3.67	1.13	4.0	57.6	16.7
In the work of a teacher, it is necessary to be able to use AI applications.	66	3.67	1.26	4.0	57.6	15.2
AI applications are useful in my teacher's activities.	66	3.61	1.15	4.0	54.5	16.7
AI helps you prepare for lessons faster and correct tasks.	66	3.59	1.12	4.0	54.5	18.2
I can get help with AI applications.	66	3.56	1.14	4.0	56.1	16.7
The school created conditions for learning how to use AI applications.	66	3.26	1.45	3.0	45.5	31.8
The use of AI increases the chances of solving problems in school.	66	2.94	1.15	3.0	30.3	36.4

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

To examine differences between groups of teachers, the Kruskal–Wallis H test was applied. This test allows for the assessment of statistically significant differences in responses across groups defined by characteristics such as length of service, qualification category, or age, particularly when the data do not meet the assumptions of normality. As a non-parametric alternative to one-way analysis of variance (ANOVA), the Kruskal–Wallis test is well suited for the analysis of Likert-type scale data. In this study, a significance level of $p < 0.05$ was adopted, indicating statistically significant differences between at least two groups, while values of $p \geq 0.05$ indicate that group mean responses do not differ significantly.

The results of the Kruskal–Wallis tests showed no statistically significant differences in attitudes toward artificial intelligence across groups defined by length of service or age ($p >$

0.05). This finding suggests that teachers' positive perceptions of AI are relatively uniform regardless of professional experience or age, indicating a broadly shared acceptance of AI technologies across the teaching workforce.

Table 16
Indicators of Generative Artificial Intelligence Adoption (GAIAS) Construct Mean and Reliability (Cronbach α)

Construct name	*n*	*Average*	*SD*	*Median*	*Cronbach α*
PE – Performance Expectations	66	3.58	0.89	3.57	0.908
FC – enabling conditions	66	3.41	1.07	3.5	0.527
EE – Effort Expectations	66	3.76	1.02	4.0	
SI – social norm	66	3.67	1.26	4.0	
LI – Learning Intention	66	3.77	1.25	4.0	

Source. Reproduced from Žibėnienė et. al., 2025, unpublished report.

The aggregated results indicate that teachers generally hold a positive view of the application of generative artificial intelligence in their professional activities. The highest mean scores were assigned to statements concerning the usefulness of AI in everyday work (M = 3.82), the perceived need to improve AI-related competences (M = 3.77), and the ease of use of AI tools (M = 3.76). Subscale analysis further shows that the Performance Expectancy dimension demonstrates high internal reliability (α = 0.91), whereas the assessment of Facilitating Conditions is comparatively weaker (M = 3.41, α = 0.53). At the same time, teachers express a strong intention to further develop their AI-related skills (LI = 3.77). Taken together, these findings reflect a generally positive attitude toward AI, while also highlighting the need to strengthen organizational and infrastructural support for its effective integration.

Drawing on the interpretation of Herzberg's two-factor theory and the empirical findings of the survey conducted among teachers in Kalvarija municipality, several recommendations can be formulated for municipal authorities and school leaders with the aim of strengthening teacher motivation:

- *Strengthen professional development infrastructure* by ensuring sustained funding for training, retraining studies, and upskilling initiatives; introduce mentoring programmes for novice teachers and establish clear, transparent career pathways.
- *Develop a culture of recognition* by implementing formalised recognition mechanisms, such as public acknowledgment, awards, and the dissemination of good practices, and by ensuring that achievements are systematically recognised at both school and municipal levels.

- *Improve communication and feedback processes* by promoting regular dialogue between school leadership and teachers and by establishing structured feedback systems that facilitate discussion of achievements, challenges, and professional development needs.
- *Ensure external guarantees and psychological security* by expanding social and health insurance measures, reviewing remuneration policies, and creating targeted support mechanisms for teachers working across multiple institutions or in geographically remote areas.
- *Integrate AI technologies responsibly* by strengthening teachers' digital competences, establishing clear guidelines for AI use, and safeguarding data protection and pedagogical autonomy through appropriate technological and organisational solutions.
- *Develop a long-term system for monitoring motivation and satisfaction* by introducing periodic assessments that enable the tracking of changes over time, the planning of targeted interventions, and the evaluation of implemented measures.
- *Ensure inclusive teacher participation in municipal decision-making processes* by actively promoting teachers' voices, particularly in matters related to innovation and education policy at the municipal level.

Conclusions

- The results of the study indicate that teachers' motivation in Kalvarija municipality is shaped by a combination of internal motivators and external hygiene factors. Job satisfaction and professional involvement are most strongly supported by opportunities for professional development, recognition, and a clear sense of meaning in pedagogical work.
- Analysis of the Herzberg motivation scale shows that dimensions of internal motivation, such as opportunities for upskilling and acquiring new competences, receive the highest evaluations, whereas external guarantees, including social security, job stability, and the remuneration system, are rated lowest. This pattern confirms the dual nature of motivation described by Herzberg's theory: internal factors act as primary drivers of motivation, while deficiencies in external factors increase the risk of dissatisfaction.
- In the assessment of working conditions, the highest priority is assigned to measures that support everyday professional activities, such as access to classroom equipment, printing facilities, and transport-related benefits. Clear definition of teachers' rights and

paid participation in municipal or school-level initiatives are also considered important. From a long-term perspective, financing retraining and professional development emerges as a key strategic priority.

- The analysis of artificial intelligence integration reveals a generally positive attitude among teachers toward the use of generative AI tools. The highest evaluations were given to statements emphasising the usefulness, adaptability, and efficiency-enhancing potential of AI, indicating that educators tend to perceive these technologies as professional support rather than as a threat to their role.
- Overall, the findings suggest that the teaching community in Kalvarija municipality is characterised by a high level of professional engagement; however, sustaining this engagement requires stronger institutional support. Systematic recognition, consistent support for professional development, and clearly articulated policies governing the use of AI are essential conditions for ensuring long-term motivational sustainability.

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