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The impact of project management maturity on the choice of SME growth strategies: the case of Kazakhstan

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Abstract: This research examines the relationship between project management maturity (PMM) and the choice of growth strategy in knowledge-oriented small and medium enterprises (SMEs) in Kazakhstan. A mixed-method approach, with quantitative and qualitative methods was used, involving a survey and in-depth interviews with company executives. The primary data were collected from 1,011 SME executives. The findings confirm that Kazakh knowledge-oriented SMEs mostly pursue a steady growth strategy, and that their managing directors were competent in project management. The SMEs, however, were not yet geared for rapid development. The managing directors of the SMEs are currently unable to guide their enterprises to greater levels of business activity. There is, therefore, a need to further develop the confidence and competencies of the managing directors of SMEs in order to achieve the sustainable growth of Kazakh commerce in the SME business sector. The findings and recommendations of this research can inform business leaders about the key resources and capabilities required to transition from small to medium size business. The research also provides policymakers with insight into the effects of sustainable development policies on SMEs in the context of developing countries.

Keywords: small and medium enterprises; SMEs; project management; strategy; project management maturity; PMM; Kazakhstan; sustainable development goals; SDGs; knowledge-oriented organisations.

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1 Introduction

1.1 Background of this study

Small and medium enterprises (SMEs) are becoming the driving force for regional development in a rapidly changing global economy where a central focus is on innovation (Berman et al., 2020; Wang et al., 2023). The choice of development strategy is critical in the turbulent business environment of developing countries (Porter, 1996; Chandler, 1962; Kotler et al., 2015). The SME strategy should not only provide mobility and flexibility for business survival, but also create a competitive advantage that will allow a business to eventually grow from small to medium-sized (Porter, 1980; Collins, 2018; Drucker, 2014). Managing and leveraging knowledge in the SME environment are becoming key activities through which to achieve strategic goals, as well as competitive advantage in knowledge-oriented SMEs (Nonaka and Takeuchi, 2003). Properly designed projects enable these organisations to meet business challenges, compete, and foster agility and innovation (Order by the President of the Republic of Kazakhstan 2022; Ignatius, 2021; Hobday, 2000; Leal and Amaral, 2019). Mubarak Rahman's research (Rahman and Kavida, 2022) has helped understand the types and nature of innovations

used in SMEs, which contribute to the development of current project management practices. Moreover, Adilson (2024) and Schaller and Vatananan-Thesenvitz (2024) expand this argument by linking strategic management and business models, emphasising the importance of integrating innovation into business strategies for successful enterprise development.

Analyses of project management practices suggest that project management maturity (PMM) can contribute to achieving organisational goals and organisational efficiencies, as well as facilitate better partnerships and contracting (Farrokh and Mansur, 2013; Ju et al., 2020; Guertler and Sick, 2021; Pennypacker and Grant, 2003). The nature of project management in a SME can have a significant impact on productivity and business skills, as well as other aspects of organisational success (Pollack and Adler, 2014; McHugh and Hogan, 2011), including effectiveness (Stimpson, 2008). However, there is insufficient evidence developed in the literature on this issue at present (Pollack and Adler, 2014).

The success of a business enterprise lies in the relationship between management strategy and projects (PMI, 2020; Grigor'ev, 2010; Eisenhardt and Martin, 2000). Effective management (Davenport and Prusak, 2000; Leonard and Sensiper, 1998; Chua and Banerjee, 2013) is required to accomplish strategic goals (Alhammadi et al., 2022; David, 2011; Hislop et al., 2018). Assessing the quality of management in SMEs has led to the emergence of project management maturity models (PMMMs) that can be used for the evaluation and/or improvement of SME management. PMM indicates the level of expertise in an organisation in relation to its application of the methods, processes and tools of project management (Adizes, 2014; Kerzner, 2017; Buschek and Matthews, 2018; Schwaber and Sutherland, 2017). PMM helps organisations understand their management strengths and weaknesses and develop processes to improve their business performance (PMI, 2021).

However, the applicability and effectiveness of PMM in various organisational and clerical contexts is not always perceived unambiguously. Management research indicates that technology-oriented and «mechanistic» applications, as well as too much emphasis on procedural aspects of management, may not take sufficient account of the broader view of environmental factors affecting a SME. Various economic, cultural, technological and contextual factors are more important than procedures for applying PMMMs when trying to achieve maximum efficiency in a variety of organisational scenarios involving the development of an enterprise (Lawson et al., 2022; Fabbro and Tonchia, 2021). The study of the possible universality and full adaptability of PMM in various business and cultural contexts is also becoming a matter of critical doubt. Furthermore, most project management research focuses on large businesses and projects (Eftekhari et al., 2022; Chang et al., 2013; Ireland and Statsenko, 2020). Much less is known about the maturity of project management and its impact on financial stability and business growth in the SME sector, especially in the context of Kazakhstan (Kireyeva et al., 2020, Statsenko et al., 2013).

2,178,951 small and medium businesses (SMEs) were registered in Kazakhstan as of January 1, 2024, with medium-sized businesses accounting for only 3,024 entities or 0.1% of the total, meaning more than 91.9% of registered SMEs are micro and small enterprises. These percentages indicate an uneven distribution of entrepreneurial activity. This study assessed technological maturity based on the concept of a knowledge-oriented organisation to address this issue. The national experience of large-scale implementation of project management and the formation of a management knowledge centre at Kazakh

National Technical Research University named after K. Satpayev is presented in this article as a segment of management knowledge formed for the development of the university as a scientific hub of new technologies and supporting the development of competencies of small and medium businesses (SMEs) managers. The concept of the centre of managerial knowledge substantiates the sequence of steps to solve the problem – to give impetus to the development of the economy of Kazakhstan through the managerial knowledge of the head of SMEs and the creation of an automated system for accumulating corporate knowledge. The authors focus on the problem of inconsistency of the level of management knowledge among Kazakhstani small business leaders with the current needs of the development of companies in the dynamics of market relations, its analysis and possible solutions.

1.2 Research rationale and aim of this study

The research reported here examined the impact of PMM on the selection of growth strategies in knowledge-oriented SMEs while identifying the factors influencing the choice of development strategies. The key research question in this study is: What are the key growth strategies and factors supporting growth of knowledge-oriented SMEs in Kazakhstan? The following sub-questions were answered: What growth strategies prevail among knowledge-oriented SMEs? What is the maturity level of project management among SMEs pursuing growth strategies? What is the role of other internal and external factors in the choice of SME growth strategies? The research objectives of this study were:

a to analyse the growth strategies of SMEs in Kazakhstan

b to analyse the internal factors influencing the choice of growth strategies of SMEs in Kazakhstan

c to determine the external factors to achieve sustainable growth in Kazakhstan.

This exploratory study uses quantitative methodology and statistical analysis to determine the role of PMM and other factors for choosing growth strategies through a survey of managers of 1011 knowledge-oriented SMEs in Kazakhstan. The conceptual framework of the study was bounded by the relationship between the level of maturity of project management and the choice of a growth strategy. Based on the empirical data, the authors discuss the influence of the level of maturity in project management on the readiness of management to choose an accelerated growth strategy in the context of business conditions in Kazakhstan. The remainder of the paper is organised as follows: Section 2 provides the theoretical background; Section 3 discusses methodology; Section 4 presents discussion and limitations; Section 5 concludes the paper and provides recommendations that have emerged from the study.

2 Methodology

2.1 Approach

A mixed methodology involving exploiting both quantitative and qualitative methods was applied in this study to obtain a comprehensive analysis of interrelation between PMM

and the choice of growth strategies for SMEs in Kazakhstan. The following components were included into this study approach:

Quantitative methods

1 Questionnaire method:
   - development and exploiting questionnaires to collect the data from 1,011 heads of organisations (Appendix A)
   - questionnaires included questions about demographic characteristics of the respondents, knowledge-oriented SMEs' PMM level, growth strategies and other related aspects
   - statistical data processing was carried out in order to identify consistent patterns.

2 Statistical inference:
   - various statistical methods of analysing collected data including descriptive statistics and synthesis;
   - evaluation of reliability and validity of measuring instruments.

Qualitative methods

1 In-depth interview:
   a in-depth interviews with the heads to gain more insight into their experiences and PMM perceptions as well as to select accurate growth strategies
   b. thematic analysis to identify the key features and insights to assess data from interviews.

2 Valuation model of PMMM:
   a capability maturity model integration (CMMI) and PMMM application for PMM level determination
   b adaptation of the models to the context of Kazakhstan consulting and research organisations
   c benchmarking analysis of the results exploiting different models to confirm their applicability and reliability.

3 Data collection and processing
   a primary survey data were collected from 1,011 managers (Appendix A)
   b the interviews were recorded, transcribed and analysed using software to obtain qualitative data analysis.

4 Integration of quantitative and qualitative methods
   a the quantitative analysis results were gained to generate hypotheses and directions for a deeper qualitative research
   b data integration allowed to obtain a comprehensive understanding of the studied phenomena and confirm or refute the identified quantitative consistent patterns based on qualitative data.

2.2 Date sources and Selection-oriented research

This section describes the data sources applied for the survey as well as the criteria and research methods for selecting.

1 Date sources

Primary data from 1,011 heads of consulting and research organisations in Kazakhstan were collected to analyse the correlation between PMM and growth strategy selection. The data includes demographics of the respondents, PMM level and growth strategies applied.

2 Selection-oriented research

Knowledge-oriented Kazakhstan SMEs' heads were involved into the survey, During the 'Consulting Week' in Almaty [October 12–14, 2023 (consulting4business.kz)] selection of the respondents for in-depth interviews was carried out based on the level of their PM experience and role in the company. CMMI and PMMM were exploited to detect the PMM level. These models were selected based on their acceptance in the scientific community and applicability to the research context.

3 Data quality and reliability

The following methods were applied to ensure the data quality and reliability:

- pilot survey to test the questionnaire with the project and scientific community
- date cross-validation to conduct re-interviews with a part of the respondents.

4 Ethical implications

The participants were informed of the study objectives and confirmed their consent. All the ethical procedures were followed in accordance with international standards.

3 Key themes and discussion

3.1 PMM of SMEs

Project management capability has been identified as a valuable competitive factor of SMEs for a long time (Turner et al., 2012). Project management increases the productivity of SMEs (Pollack and Adler, 2015). The research shows that PMM has a positive impact on the business performance of SMEs (PMI, 2021; Lawson et al., 2022; Fabbro and Tonchia, 2021). Most competitiveness studies of knowledge-oriented SMEs, however, focus on entrepreneurship and innovation. The project management aspect is often immersed in general management discussions, such as implementation and marketing, accounting, human resources and information technology (Hudson et al., 2001; Turner et al., 2012). Also mentioned is the effect of providing opportunities from project management for SMEs in adapting open innovations (OI), as well as finding and selecting OI project partners (Guertler and Sick, 2021). Agile project management in China's high-tech SMEs has improved trading performance, mitigated by the ability to bring innovation by both internal and external speakers (Ju et al., 2020). However, the evidence is still limited in the literature. There are two sets of PMMMs applied in the context of knowledge-oriented SMEs. The first is a model for streamlining process

improvement, the CMMI, applying the philosophy of increasing maturity (Humphrey, 1992). This philosophy has received worldwide approval (Adizes, 2014).

The second was originally released in 1991, the Software Capability Maturity Model (SW CMM) which popularised the concept of maturity models as consisting of levels across multiple opportunity zones (Adizes, 2014).

Project maturity develops via the maturity ladder – project, program and portfolio management. Maturity is measured in three dimensions: knowledge (being able to do different tasks); attitude (wanting to do them); and actions (actually doing them) in the organisation (Andersen and Jessen, 2003; Crawford, 2021). This model, however, can be criticised for being technology-oriented (Wen and Qiang, 2016a). It does not take into account the organisational implementation tools and contextual factors associated with the environment in which the business is conducted (Lawson et al., 2022). Different maturity models have been actively introduced into the field of project management by the Project Management Institute (PMI), which has chartered the Organisational PMMM (OPM3™) Project Team (PMI, 2003). The PMI was one of the first groups to highlight the role of organisational factors within organisational project management (OPM). To consider the benefits of technology-oriented models, many OPM maturity models have incorporated organisational factors into their concept, such as the portfolio, program and project management maturity model P3M3) developed by the Office of Government Commerce (OGC, 2006) in the UK and the five-scale PMMM, referred as K-PMMM or KPM3 after its developer Dr. Harold Kerzner (2019). These models broadly retain the parts of the project maturity assessment in previous models and increase the parts of the organisational factor, such as institutional and cultural factors (Lianying et al., 2012).

Organisational features include structural, cultural, technological, and personnel factors supporting best practice (PMI, 2013). However, the complexity of organisational factor systems means that no single model of project maturity management has received universal approval (Wen and Qiang, 2016b). Adapting these models to the parameters of SMEs within a country-specific economy remains challenging in the cultural context due to resource constraints. Most of the research papers published recently examine the organisational environment and related organisational factors (Jalal and Koosha, 2015; Mathur et al., 2013; Müller and Lecoeuvre, 2014). Organisational mechanisms of implementation are perceived as non-repeatable resources in a resource-oriented approach to the business, which makes organisational mechanisms of implementation either firm-specific (Amit and Schoemaker, 1993), or contextually specific (Mathur et al., 2013). Having aligned with the organisation's strategy, the benefit management was also enhanced in the recent 7th edition of the Project Management Knowledge Set (PMBOK® Guide) (PMI, 2021). The information presented in the management literature also does not give a clear idea of the considered issues. Nevertheless, the researchers Grant and Pennypacker (2006) feel sure that measuring maturity, especially in terms of organisational factors, is contextually specific. Yazici (2009) separately analysed the effects of the maturity process and organisational culture on project performance. The empirical findings indicate that organisational culture effects are more significant. Müller and Lecoeuvre (2014) identified a lack of direct investigation of organisational implementation tools in the project management literature. as organisational implementation tools in the capability maturity model (CMM) are examined at the intersection of the strategic management and project management literature (Müller and Lecoeuvre, 2014).

The two contradictory observations about the role of PMM and other factors in the selection of growth strategies or the financial stability of SMEs have been identified:

O1 The maturity of project management positively influences the choice of growth strategy by small enterprises and their transition to medium-sized businesses in developing countries.

O2 The factors such as organisational implementation tools (cultural, technological and human resources) and organisational environment (political, economic and legal) mitigate the influence of PMM on the choice of knowledge-oriented strategies.

3.2 Growth and financial stability strategies of SMEs

The profitability of an enterprise is an indicator of the success of its activities. Increasing the profitability of an enterprise is one of the main goals of management (Drucker, 2010; Osterwalder et al., 2014). Research on the strategic development of SMEs confirms that government economic policy measures affect the pace and quality of SME growth in the countries where the state dominates, namely in China, Russia and Kazakhstan (Lee and Aziyeva, 2020). Thus, it is important to understand the critical factors for success in business and the economic environment that influence a SME's choice of strategy when seeking to achieve stability and growth in their business. The management of partner selection process (MPSP) is not sufficiently researched to date and is presented fragmentarily in some sources (Amponsah and Samuel, 2023). In the literature, the managing directors of SMEs confirm that their organisations not only collect information and data, but also share it with their employees in an effort to improve their business processes and management decision making methods. Knowledge-oriented organisations focus their attention on training employees, implementing innovative technologies at all levels, managing knowledge and creating appropriate conditions for further development of the intellectual capital contributing to the growth of efficiency and competitiveness in the long term (Bhatt, 2001; Hislop, 2013). The choice of strategy depends on the personal experience of each business owner, the motivating factors and the desired results (Ghobadian and O'Regan, 2006). Most research into the strategic orientation of SMEs is focused on the competencies and skills of business owners and the experience of managing directors in countries with a competitive market model (Kollinz, 2014). Business leaders must have all the necessary knowledge and skills to apply their available resources effectively (*Agile: Practical Guide*, 2019; Hislop, 2018; Hislop and Alok, 2021) in compliance with the requirements of regulatory authorities (Collins, 2018; Kollinz, 2014; Kovi, 2010; Trump and Kiyosaki, 2016).

One of the commonly chosen approaches to achieve financial sustainability and development of a SME is an adaptive strategy (Lee and Aziyeva, 2020; Csikszentmihalyi, 2011; Collins and Porras, 2014; Eisenmann et al., 2006), allowing the business to adapt to market changes as soon as possible. An adaptive strategy can be used by SMEs even if they neither possess the tools for long-term planning nor have numerous resources. However, there is disagreement in the literature regarding the definition of the optimal adaptive strategy and the choice of tools for its implementation (Nechayeva, 2018; Ambler and Lines, 2012; Dingsøyr, 2014). It is generally accepted that the financial stability and growth of SMEs depend on their ability and desire to change. Strategic flexibility refers to the business's ability to adapt to the current business environment and the speed of adaptation (Reed, 2021). Strategically flexible entrepreneurs can quickly

change direction due to high sensitivity to the market situation, the ability to build accurate forecasts, make bold decisions, and redistribute available resources. Strategic agility is the dynamic ability that gives enterprises the ability to realign their resources and capabilities in response to a rapidly changing market situation (Teece et al., 2016, 1997). A business's ability to integrate, convert and leverage new knowledge determines its level of organisational innovation, such as being able to respond more quickly to problems or new information. Thus, strategic flexibility plays a key role in maintaining the success and competitiveness of knowledge-oriented businesses (Cegarra-Navarro et al., 2016; Hussinki et al., 2017) even if a business faces definite organisational difficulties (Mabey and Zhao, 2017). Indeed, SMEs often introduce new technologies and systems in conditions of market uncertainty, which helps them cope with the situation and avoid losses. It should be noted that a strategic partnership for SMEs (Porter, 1980; Reichheld, 1996; Liu, 2020) is another way to overcome resource constraints and achieve competitive advantage. When the resource base is limited, SMEs can update and replace tools to achieve positive results through strategic partnerships. It should be noted that SMEs' growth opportunities are created through the synthesis of the individual qualities of employees and the planning and organisational strategies developed by the business's management, as well as many other factors, which necessarily include the market situation. Strategic partnerships, in turn, attract resources to the businesses and allow almost any business processes and functions to be outsourced (Juergensen et al., 2020; Riviere et al., 2018). The processes of strategic renewal in SMEs may be related to the choice of several alternatives, but the business will prefer the option that allows maintaining the status quo or getting out of the situation with minimal losses. For a large number of SMEs, such a solution is considered more comfortable than risk. Moreover, such a choice will entail the optimisation of partnerships with various external stakeholders (Demmer et al., 2011). However, there are a number of outstanding issues in how to select and evaluate potential partners and how to ensure mutually beneficial cooperation.

3.3 The conceptual model and instrument development

The need to identify growth strategies for knowledge-oriented SMEs, the role of PPM and other factors influencing SME growth in the context of a changing market and economic situation in Kazakhstan, as well as the exploratory nature of the research design led to the choice of mixed methods for this study.

Table 1 Dynamics of RK GDP and its growth/fall according to the USA consumer price index (CPI)

RK GDP (years)	*Growth/fall (USD)*	*Adjusted for inflation (CPI)*
2020	–1.8%	–4%
2021	4%	–3%
2022	3.5 %	–3%
2023	5.1%	+1.7%

Source: The table was compiled by the authors based on the source: http://global-finances.ru/inflyacziya-v-ssha-po-godam and RK State Statistics Committee and Date of publication; https://www.investing.com/economic-calendar/cpi-733

Mixed methods research design was adopted in this study. Quantitative research was used to verify the validity of the theoretical assumptions of the current research. Two workshops have also been conducted with 1,750 SME CEO before and after the survey. The first introductory workshop aimed to verify and validate the questionnaire and the measurement model, the second – to verify and validate the findings and draw the conclusions. A literature review was carried out to identify factors related to the strategic/development planning of SMEs. The factors influencing the choice of development strategies were identified during the literature analysis. PMM emerged as the most significant factor influencing the planning of managers of SMEs. The strategic focus of SMEs had been defined through concepts such as 'financial stability', 'rapid growth' and 'significant size' as outlined in previous research (Smallbone et al., 1995):

- Rapid growth – more than doubling sales turnover over a 10-year period.
- Increase in size – increase in sales turnover.
- Financial stability is defined as consistent profitability, survival.

The level of maturity of the project management was measured using the five-level Gartner model (Miklosik, 2015; Tahri and Drissi-Kaitouni, 2015). During the research, the leaders of the Kazakhstan SMEs demonstrated a poor understanding of the concept of project maturity levels when the project maturity model (PMM) was explained during an introductory workshop. In order to assist the participants, PMM was simplified to consist of three levels from original five scale:

- Level 0 «Low» – initial, situational or reactive mode.
- Level 1 «Middle» − developed, repeated or systematic mode.
- Level 2 «High» − fully controlled and optimised mode.

Other data reflecting the strategic orientation of SMEs were taken from the existing literature and adjusted based on the expert opinions. Analysis from the seminar indicated that the heads of the SMEs responded to a number of different influences when planning the activities of their businesses (Table 2).

Table 2 Factors influencing SMEs strategic focus

Factors	*Frequency*
Government regulation	81%
Technical readiness	78%
Prevailing culture and mentality	77%
Business environment	21%
Market opportunities	76%
Global economy	49%

3.3.1 Data collection and analysis

A questionnaire was compiled with the active participation of stakeholders from academia and industry experts and verified at the introductory workshop. Key factors were determined on the basis of feedback from this group, which contributed to

improving the quality of the questionnaire's content. In this way relevant questions were prepared in accord with the focus of the research. Measurement scales for the factors affecting the choice of strategies were adapted to Kazakhstan SMEs. The number of the participants in the study was based on the number of SMEs registered in Kazakhstan whose managers needed a higher level of knowledge and experience. The needs of these managers were assessed using data provided by the Bureau of National Statistics and JSC 'Halyk Finance' (2022) (SME Research in Kazakhstan, 2022). The total number of active SMEs as of January 1, 2022 was 1,732,696. The number of SMEs focused on knowledge management and led by managers with a mature level of project management was 493,751 units (28.5%) (Bureau of National Statistics, 2022b). The number of businesses with more than ten years of experience was 98,751 (20%) (Iskakova, 2023). Standard formulas (Appendix B) were used to calculate the minimum sample size of SMEs (385) to conduct valid research. The authors conducted a survey of more than 1,000 managing directors and owners of medium-sized businesses to guarantee the generation of reliable data. The questionnaire was distributed among the selected directors and owners during the 'Consulting Week' in Almaty, October 12–14, 2023 (consulting4business.kz). In total, 1,011 directors from medium-sized companies took part in the survey completing the questionnaires online (Table 3) (Appendix A).

Table 3 Survey participants

Sector	*Quantity (%)*
Consulting sector	347 (34%)
Information and communications	79 (8%)
Financial area	171 (17%)
Education and development	217 (21%)
Start-up entrepreneurship and the entrepreneurial sector	197 (19%)
Demographic profile of participants	*Quantity (%)*
Manager/director	632 (63%)
Business owner	379 (37%)
Number of employees	*Quantity (%)*
< 5 employees	176 (17%)
5-20 employees	489 (48%)
> 20 employees	346 (34%)

A statistical cross-sectional analysis was applied to identify the development strategies for SMEs using the 'Social Science Statistical Data Processing Program Package' (SPSS). Sampling was carried out randomly, then, the received responses were divided into three groups to check the safety of the results. Many variations were not found in the results. Checking up was also performed to determine whether or not the two objects were statistically different from the random sample. Each group was assigned a number from 1 to 3 in the database for each record, then, the means and standard deviations were calculated. $P > 0.05$ meant that the null hypothesis was not rejected, since the difference between the average values of the compared sample objects did not have significant differences. Individual strategies and maturity levels were then tested to determine whether the results were stable when the sample size of the subject changed. In addition, to triangulate and ensure validity and reliability of the findings, a workshop with 25

CEOs was held to review the results and clarify the conclusions. The preliminary conclusions and data analysis were presented to the participants for open discussions, consideration of results and feedback. The limitations of this study is the subjectivity and contextual specificity of the assessment in the context of the prevailing mentality and traditions, as well as the idiosyncrasies of the formation of SME organisations in the Republic of Kazakhstan.

4 Results

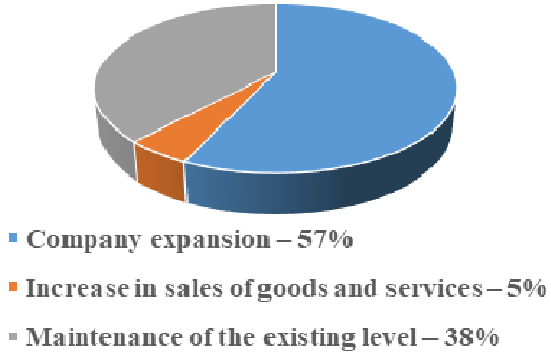
4.1 Analysis of the entire sample

4.1.1 Business growth strategies

The results related to the ways in which the direction of the business's development strategy was selected showed significant differences. The respondents preferred the following strategies (Figure 1):

- business expansion – 57%
- increase in sales of goods and services – 5%
- maintenance of the existing level – 38%.

Figure 1 Strategic orientation of the SMEs (see online version for colours)



Source: Authors' collection based on this research results

The results of the next question in the survey showed that 69% of respondents used an adaptive strategy; 12% a strategic partnership and 19% of the respondents could not describe the business's strategy clearly (Figure 2).

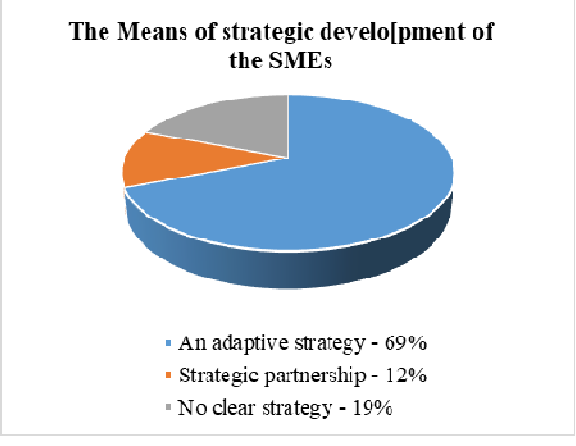
4.1.2 PMM level

The survey question asking the respondents to estimate the maturity level of the companies' project management produced the following data (Figure 3):

- 12% of the SMEs – low level
- 74% of the SMEs − average level

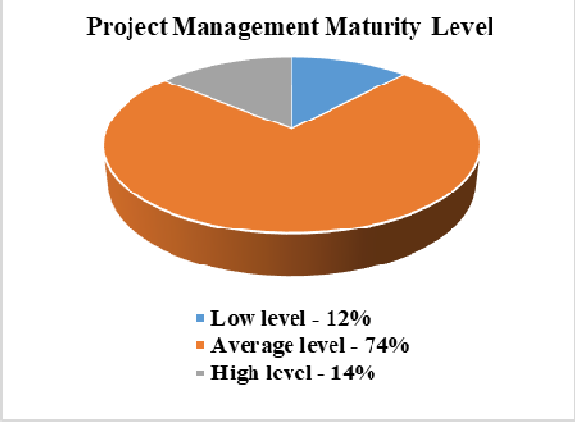
- 14% of the SMEs − high level.

Figure 2 Types of strategies (see online version for colours)



Source: Authors' collection based on this research results

Figure 3 PMM level of the SMEs (see online version for colours)



Source: Authors' collection based on this research results

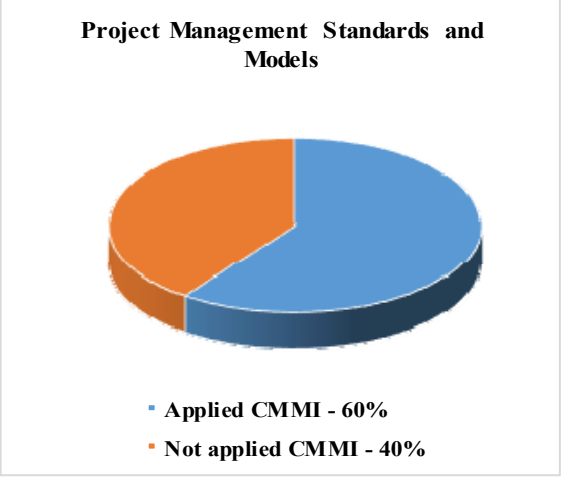
What methods for assessing PMM are used in your company CMMI model, PMI model, Internal assessment methodologies or none. The assessment of the use of project management standards, yielded the following data (Figure 4):

- 60% respondents – CMMI is applied
- 40% respondents – CMMI is not applied.

The users who apply the CMMI standards and models (60%) confirmed that they require adaptation for more successful application in Kazakhstan. The assessment of other factors yielded the following data (Figure 5):

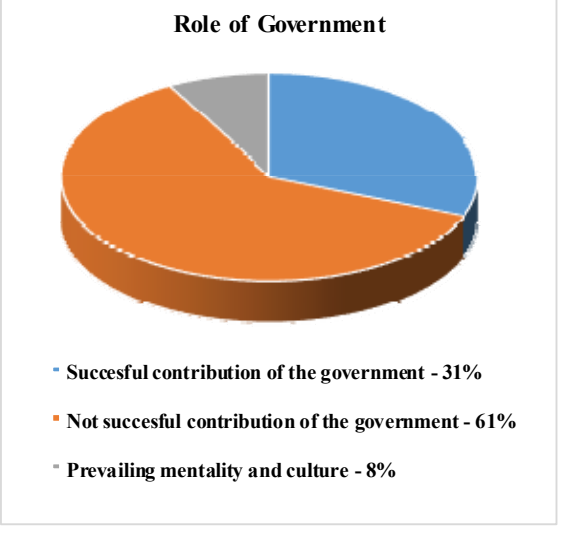
- 31% of respondents – the governmental solutions contribute to the successful project management
- 61% of respondents − government decisions hinder the successful project management
- 8% of respondents − the prevailing mentality and culture is an obstacle for growth and transition to the middle segment.

Figure 4 Use of project management standards and models by the SMEs (see online version for colours)



Source: Authors' collection based on this research results

Figure 5 Role of government (see online version for colours)



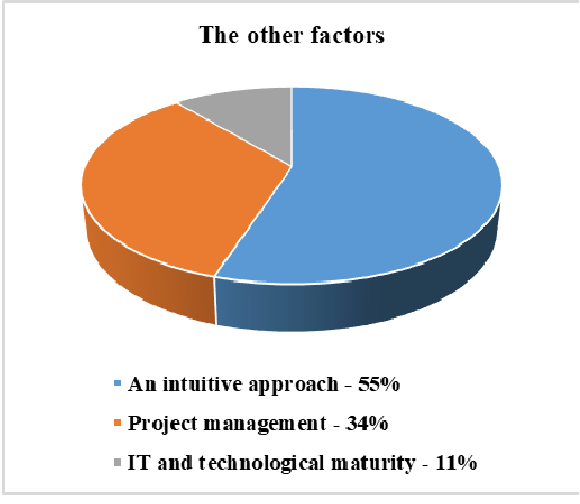
Source: Authors' collection based on this research results

Analysing the strategies to build and maintain competitive advantage and being based on the assessment of the role of the other factors, the following data were obtained (Figure 6):

- 55% − prefer an intuitive approach to build and maintain their enterprise
- 34% − apply project management
- 11% − rely on information technology and technological maturity.

The respondents noted that available loans, the latest information technologies and staff competencies are determining factors for a successful transition to the middle segment.

Figure 6 The most effective technologies applied (see online version for colours)



Source: Authors' collection based on this research results

4.2 The group analysis

The group analyses were conducted among the groups with three different strategic orientations:

1 rapid growth

2 increase in size

3 financial stability.

The group of the respondents who chose the strategy of rapid growth demonstrated the following results (Figure 7):

- 87% − adaptive strategy
- 7% − strategic partnership
- 6% − found it difficult to answer.

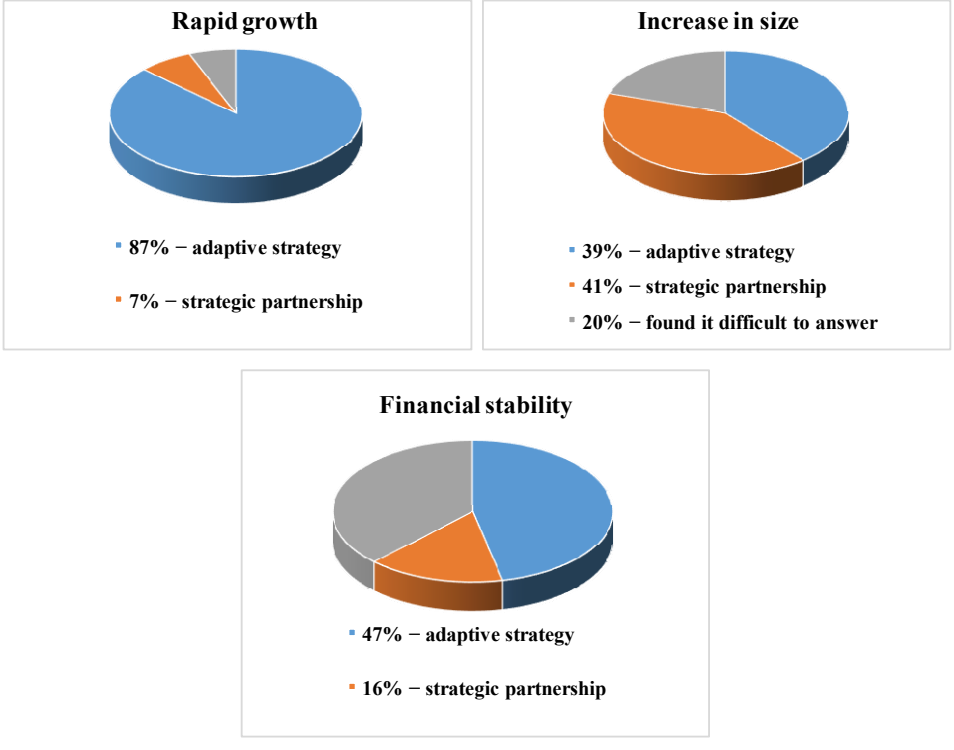
The SMEs who decided to choose the strategy of increasing in size recorded the following data:

- 39% − adaptive strategy
- 41% − strategic partnership
- 20% − found it difficult to answer.

The companies choosing the strategy of financial stability recorded the following figures (Figure 7):

- 47% − adaptive strategy
- 16% − strategic partnership
- 38% − found it difficult to answer.

Figure 7 The types of growth strategies (see online version for colours)

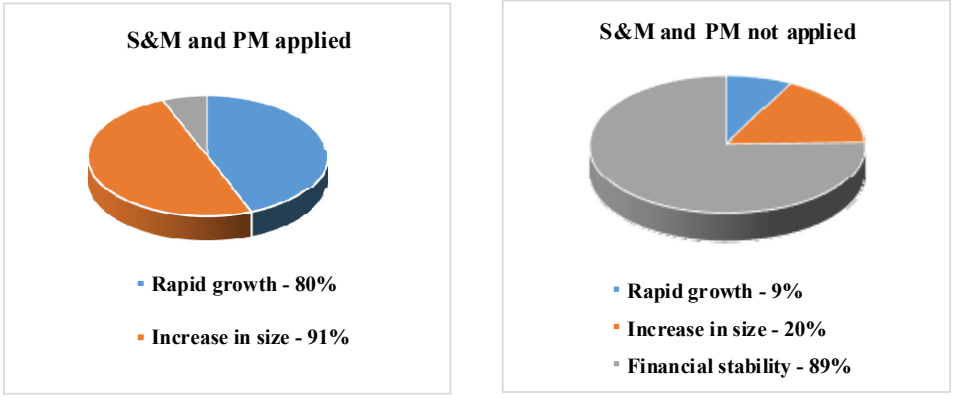


Source: Authors' collection based on this research results

Figure 8 presents the efficiency of the standards and models. 91% of the respondents follow the strategy of rapid growth and apply the standards and models of project management in practice. 9% do not apply them. 80% of SMEs preferring the rapid growth strategy apply project management standards and models, but 20% do not feel a necessity to apply them. Only 11% of the respondents choose a financial stability strategy and actively use the advanced project management methods to optimise their businesses.

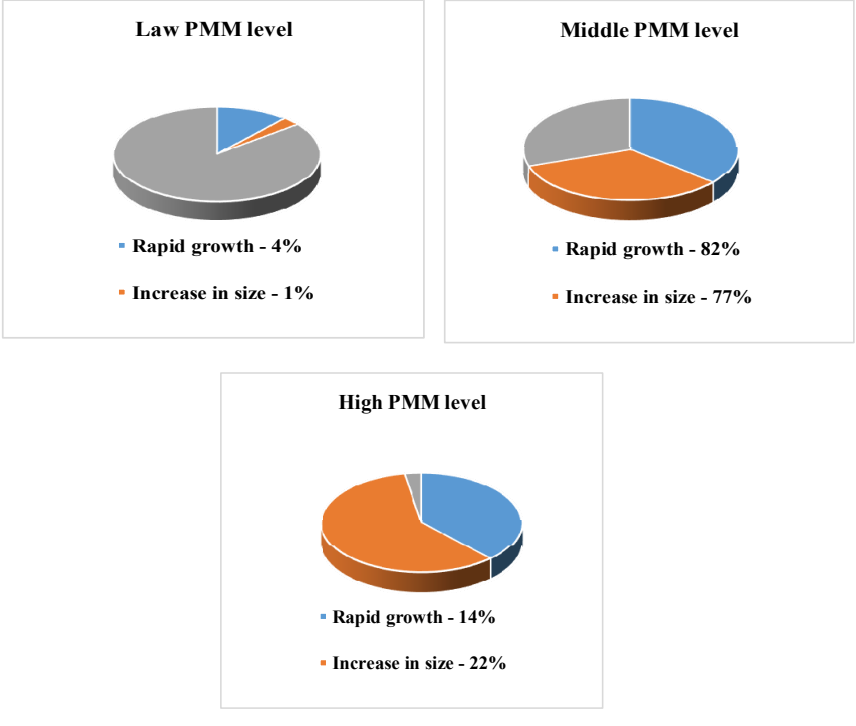
However, 89% of SMEs prefer to rely on their own methods and resources. The data shows that all groups of enterprises that were focused on significant and rapid growth are competent when applying project management and methods, while those focused on financial stability were not (Figure 8).

Figure 8 Applying standards and models in project management (see online version for colours)



Source: Authors' collection based on this research results

Figure 9 Project management maturity (see online version for colours)

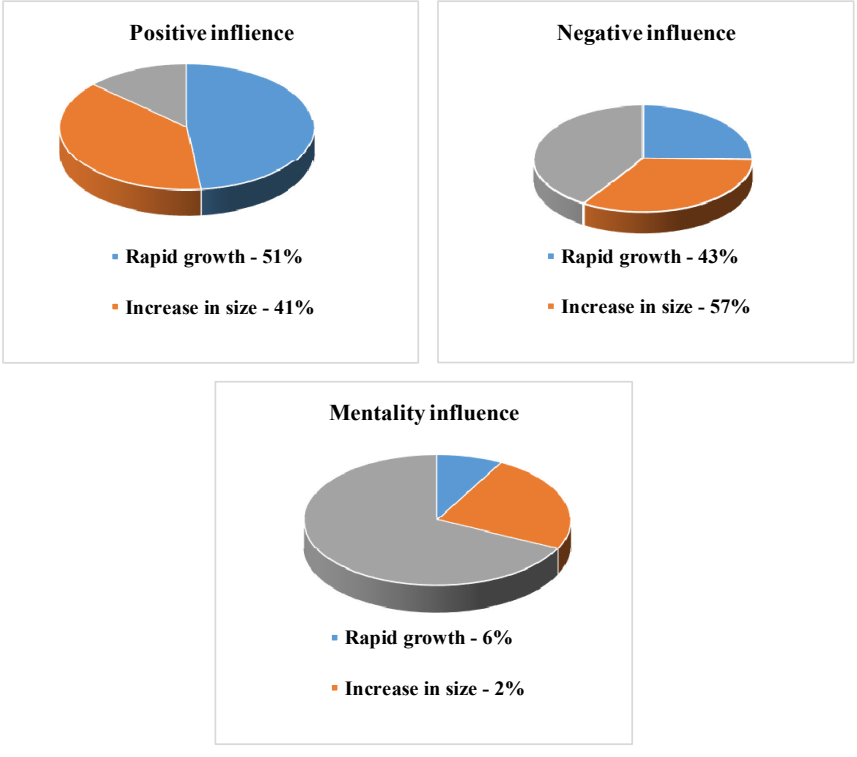


Source: Authors' collection based on this research results

The PMM of 1% of the respondents adhered to the strategy of significant size and are intuitive; 77% have reached the quantitative level; 22% have reached the highest level of PMM (Figure 9).

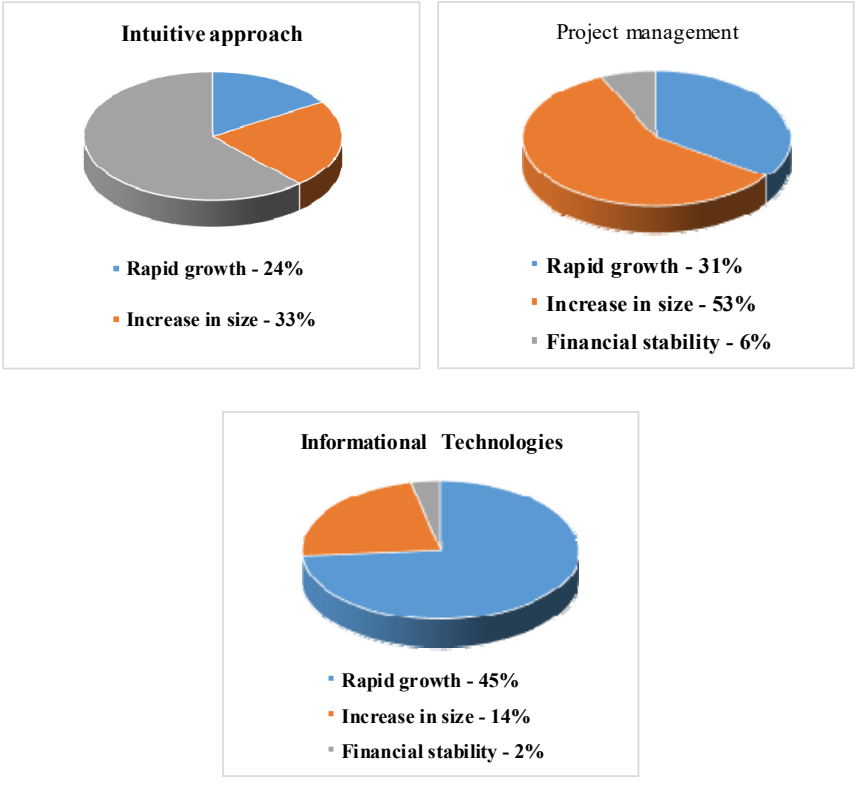
Four percent of the respondents adhering to the rapid growth strategy are at the intuitive level while 82% of the SME heads have reached the quantitative level. The rest, 14%, have reached the highest PMM level. 30% of the SMEs adhering to the financial stability strategy are at the intuitive level, but 69% have reached the medium one and the rest, 1%, of the respondents are at the highest level of PMM. The lowest level of PMM was among the 30% of the SMEs focused on the strategy of financial stability. Regardless of the strategic orientation, the largest number of respondents in each group (77%, 82% and 69%) is at the medium PMM level. The SMEs that were focused on rapid growth and significant size strategies recorded the higher PMM levels, 14% and 22% respectively. The influence of other factors on the strategic development is presented in Figure 10. The results confirm that 41% of SMEs pursuing a growth strategy consider government decisions to be positive for their strategic development. However, 57% perceived a negative impact. 2% believed that the mentality is an obstacle to their ability to move into the mid-market segment. The group of enterprises following the strategy of rapid growth indicated that 51% of the respondents felt that government decisions were useful for their strategic development, while 43% did not. 6% considered the mentality to be a barrier.

Figure 10 Other external factors affecting the strategic orientation (see online version for colours)



Source: Authors' collection based on this research results

Figure 11 The organisational factors supporting the strategic orientation (see online version for colours)



Source: Authors' collection based on this research results

Approximately 14% of the respondents believed that government decisions contributed to their positive strategic development. 69% of the SME heads responded that government decisions interfered with their growth, and 17% agreed that development and transition to a medium-sized business was influenced by the prevailing traditional mentality (Figure 10).

Regarding the integration of technologies, the results indicated that 33% of the respondents who focused on growth relied on the experience and intuition of the directors supporting the strategic development of SMEs, while 53% recognise the role of project management methodology. 14% believed that the adoption of information technology is the most effective factor in pursuing strategic goals. 24% of the respondents choosing a rapid growth strategy applied an intuitive approach and 31% proclaimed the critical importance of project management methodology in the implementation of their strategy. 41% commented on the primary role of the digitisation of processes. 92% of the respondents choosing a strategy of financial stability preferred to use an intuitive approach. 6% considered project management critical in the implementation of the strategy and only 2% commented on the primary role of their technical readiness. These findings are consistent, confirming that the capabilities of the business owners and directors are critical in the strategic development of their SMEs (Lee and Aziyeva, 2020; Trump and Kiyosaki, 2016). The data indicates that more than a half (53%) of the SMEs

pursuing the significant size strategy recognise the value of project management, with 33% relying on the COE intuition. 14% of the respondents were on the process of digitisation. Most respondents following a rapid growth strategy (45%) acknowledged the role of the process of digitisation. 31% confirm the importance of PMM. The rest, 24%, rely on the experience and intuitive of their directors (Figure 11).

5 Conclusions

The results of this study provide information for decision making by managers, directors and business owners who formulate policies for SMEs. The research outcomes discussed contribute to the development of recommendations and strategies aimed at the integrating aspects of sustainable development into the strategic planning and management of SME projects in Kazakhstan in accordance with the United Nations sustainable development goals. The study found that the majority of the SME leaders favoured strategies of considerable scale, reflecting their desire for sustainable economic growth. They applied adaptive strategies, emphasising the importance of leadership and digitisation of processes for economic growth and sustainable development. SMEs strategically aimed at accelerated growth demonstrated a high level of maturity in project management. Among other factors, they recognised the role of the managing directors and indicated that the directors' competencies, as well as the digitisation of processes, were the key drivers of their strategic growth and transition to the middle segment of the market. On the other hand, the results show a lack of awareness and use of project management standards among SMEs in the Republic of Kazakhstan (Ju et al., 2020).

Moreover, the positive impact of the government initiatives in the field of business development were not always clearly perceived by the managing directors who participated in the study. Some businesses found regulation to be pro-business, while others found just the opposite. Deeper research is needed on specific aspects of government influence on the successful mid-range transitions and development of knowledge-oriented enterprises. These factors are closely related to the achievement of the SDGs, as they affect economic growth, innovation and sustainable development of the economy as a whole.

The study generated a range of observations related to SMEs that could influence policy makers:

Firstly, managers, directors and owners of medium-sized businesses in Kazakhstan prefer an accelerated growth strategy. Nevertheless, a small percentage of enterprises that had chosen accelerated growth and financial stability strategies also indicated the need for a supportive external environment (conditions) for the growth of SMEs.

Secondly, the study results indicated that there is a necessity to increase the PMM level among the medium-sized enterprises, and the implementation of more effective project management methods would result in a higher level of maturity.

Thirdly, the widespread dissemination of CMMI and PMI standards is essential in order for their successful uptake in Kazakhstan.

Fourthly, the study results highlighted the role of external and internal organisational factors in supporting strategic development. Both the decisions of the government and norms of traditional culture in Kazakhstan, as well as business attitudes related to the strategic development of SMEs demonstrates the need for cooperation and dialogue

between enterprises and the state in order to achieve development consistent with sustainable development goals.

Finally, the study highlights the importance of the experience and intuition of business owners and the adoption of advanced information technologies for the successful transition of SME enterprises from small to medium-sized. The availability of loans, the use of modern technologies, and the competencies of managing directors and their teams are important factors for the development of small enterprises into larger enterprises. It is necessary to note the limitations of our study, such as the limited sample size and limited access to data due to the lack of statistical material in the Republic of Kazakhstan. There may have been as well undetected factors that affected the overall picture and the conclusions of the research. Therefore, further research is required.

It is important to take into account the cultural and organisational aspects affecting project management strategies, as well as develop the competence of managing directors, and use information technologies to improve their management efficiency.

Two theoretical judgments have been examined in this study:

1 the maturity of SME project management positively influences SMEs' choice of growth strategy and the transition to medium-sized businesses in Kazakhstan

2 other factors, such as organisational tools for strategy implementation (cultural, technological and human resources) and external environment (political, economic and legal) influence PMM and the choice of strategies in knowledge-oriented SMEs as far as they are consistent with assessments and publications and discussions at conferences of the Center for Management Knowledge of Kazakh National Research Technical University (KazNRTU) named after K.I. Satpayev.

The study conducted among managers, directors and owners of SMEs in Kazakhstan revealed the variety of strategies and approaches used by these business heads to manage their businesses. The results obtained can be used both for scientific research and for practical application, with the possibility of a significant impact on the business community and the economic structure of the country in the medium term. The data analysed for the current research revealed a significant diversity in strategic approaches to business management, largely depending on the size and strategic orientation of their businesses. The managers who were focused on business consolidation and transition to mid-size relied on their experience and intuition, while the companies choosing a rapid growth strategy were focused on project management and the digitisation of processes. The companies following financial stability strategies prioritised an intuitive approach, highlighting the role of business owners and managing directors. However, more than half of the businesses following a large-scale strategy recognised the importance of project management. The results of the study provide strategic insights for enterprises and make a compelling case for improving PMM among midsize enterprises. The implementation of CMMI and PMI standards would contribute not only to an increase in project maturity indicators among the business participants in this study, but would also assist businesses apply strategies in greater accordance with the UN SDGs. Examination of medium-sized businesses in Kazakhstan resulted in the following conclusions based on the four key research questions:

1 Choice of management strategy: The largest number of SMEs participating in the study preferred a management strategy that would result in stable and moderate growth, which may indicate a conservative approach of management. A minority preferred an accelerated growth strategy. The difference in strategies may have been the result of limited opportunities for more aggressive development.

2 PMM level: Analysis of the data demonstrated that most of the participating enterprises had reached the quantitative level of PMM. Formalised project management processes were in place in those businesses. Further improvement in the quality of management requires the integration of more advanced techniques, however.

3 Maturity of project management and its impact on SME success: Insufficient knowledge and lack of consistent development of managerial competencies in medium-sized businesses can limit the success of SMEs. The study revealed the need to integrate modern information technologies and adapt management strategies to the conditions of a rapidly changing business environment.

4 Influence of external and internal factors: The study highlights the importance of greater analysis of government decisions and cultural factors that influence project management. Adapting management approaches to the specific circumstances of the local organisational environment is key to improving the effectiveness of project management.

The study reported in this article contributes to a timely awareness of the impact of the maturity level of project management on the strategic decisions of the medium-sized enterprises in Kazakhstan, a developing economy with a unique history and culture. The results emphasise the importance of digitisation and enhanced project management as critical elements in the acceleration of business growth and sustainability. Additionally, the article contributes to the development of methodological approaches for integrating sustainable development goals into project management strategies, which opens up new opportunities for improving business practices at the international level. The future research directions may include deeper analysis of the impact of different factors on growth strategy choices, broader coverage of countries, and comparative analysis of study findings across contexts. A more detailed analysis of the level of maturity of project management in Kazakhstan and its impact on the success of projects and businesses as a whole would be useful, along with the preparation of a domestic SME development manual that encouraged increased management expertise based on agile models of business.

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Appendix A

Survey questionnaire

Dear Managers and Representatives of Medium-Sized Businesses in Kazakhstan!

This questionnaire has been developed for the purpose of conducting research aimed at understanding the strategic choices and project management maturity level among enterprises in the medium-sized business segment. Your responses are important to us and will be used for the analysis of current business trends, as well as for identifying factors that influence the sustainable development of enterprises. We kindly ask you to take the completion of this survey seriously and openly, as your opinions and experiences are of great importance for understanding the current situation and business development in Kazakhstan. Thank you for your participation in this research.

Strategic orientation:

1 What development strategy have you preferred for the current year?
   - significant size strategy
   - rapid growth strategy
   - financial stability strategy
   - other (please specify)

2 What methods and tools do you use for selecting and implementing the chosen strategy?
   - adaptive strategy
   - strategic partnerships
   - standard analysis methods
   - advice and expert opinion
   - other (please specify)

3 What factors influenced your choice of strategy?
   - economic stability
   - market opportunities
   - financial resources
   - competitive environment

- innovation opportunities
- other (please specify)

Project management maturity level:

1 How would you rate the project management maturity level in your company?
   - low
   - medium
   - high

2 What methods for assessing project management maturity are used in your company?
   - CMMI model
   - PMI model
   - internal assessment methodologies
   - not used

3 What challenges or problems have you encountered when improving the project management maturity level in your company?
   - lack of resources
   - lack of employee competence
   - difficulties in implementing standards
   - other (please specify)

Effectiveness of standards and models:

1 Which project management standards or models have been implemented in your company?
   - CMMI
   - PMI
   - Other (please specify)

2 Do you believe that these standards or models are effectively applied in your company?
   - Yes
   - no
   - not sure

3 What difficulties have you experienced in the implementation and use of these standards or models?
   - difficulties in adaptation
   - lack of understanding among employees
   - other (please specify)

Appendix B

To determine the size of the minimum sample volume, the following formula was used:

$$n = \frac{t^2 pqN}{\Delta^2 N + t^2 pq} \tag{B1}$$

where

n	is the required sample size
Δ	is the size of the maximum (limiting) random error
t	is the numerical coefficient corresponding to the level of confidence in the estimate; in our case, $\Delta = 0.05$ and $t = 1.96$, which ensures the accuracy of the results in 95 out of 100 cases with a margin of error of ± 5%.
N	is the size of the general population of 6,123 medium-sized businesses in the sector
P	is the proportion of respondents with the studied attribute
$q = 1 - p$	is the proportion of respondents without the studied attribute. We consider p and q to be 0.5 since they are not known with certainty before conducting the study.