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INDIVIDUAL VITAL COMPETENCIES UNDER ENERGY COLLAPSE AS DETERMINANTS OF SECURITY: INSIGHTS FROM UKRAINE'S RESISTANCE TO MILITARY AGGRESSION

Abstract

This article offers a conceptual and analytical examination of prolonged energy collapse in wartime and post-crisis environments as a form of *vital-crisis reality*, in which infrastructural instability becomes a multidimensional challenge at the individual level. The study focuses on **individual vital competencies** as key determinants of security, understood as an integrated system of resources enabling individuals to preserve vitality, sustain life, and maintain professional functionality under conditions of resource scarcity, disrupted communication, and persistent threat.

The research addresses a methodological gap in existing literature, where energy collapse is primarily analysed within technical and security frameworks, while the individual's competency-based capacity to function under prolonged instability remains insufficiently conceptualised. To address this gap, the article develops an integrated model of vital competencies encompassing physical-vital,

psychological-mental, cognitive-orientational, moral-value, and professional-functional dimensions.

Drawing on Ukraine's empirical experience of resistance to military aggression, the study demonstrates that energy collapse functions as a systemic condition requiring continuous mobilisation of individual resources. In this context, vital competencies act as practical determinants of security, ensuring life preservation and sustained professional responsibility.

The findings contribute to competence-based approaches within the European lifelong learning framework by introducing a crisis-oriented perspective grounded in real conditions of prolonged instability.

Keywords: vital competencies; vital security; energy collapse; individual resilience; life preservation; professional responsibility; military aggression.

Introduction. Contemporary wartime and post-crisis transformations necessitate a reassessment of established conceptions of security, as the vulnerability of critical infrastructure increasingly assumes not only material but directly life-sustaining significance for the population. Under such conditions, energy instability ceases to be merely a background technical factor and instead emerges as a systemic determinant that reshapes everyday life organisation, the structure of labour activity, communication regimes, and access to essential services, thereby exerting sustained pressure on the physical, psycho-emotional, cognitive, and moral-value resources of the individual [2; 3].

In contemporary scholarly discourse, the phenomenon of energy collapse is predominantly examined within technical, energy, managerial, and security-oriented research, with a primary focus on energy system stability, the protection of critical infrastructure, risk management, and the minimisation of socio-economic losses. At the same time, humanitarian and social approaches (resilience, human security, crisis management, psychosocial resilience)

significantly broaden the analytical framework; however, they tend to focus on isolated consequences of crisis conditions or stress responses rather than providing a comprehensive, integrative perspective [4; 6].

As a result, a methodological asymmetry emerges: while the infrastructural dimension of the problem has been extensively elaborated, the subject-centred dimension – namely, the individual's internal readiness to act under conditions of prolonged instability and their competency-based capacity to sustain both the individual's viability and professional functionality – remains insufficiently integrated into a coherent analytical framework.

Particular importance arises from the need to combine life-preserving tasks with the fulfilment of labour and professional responsibilities under conditions of limited access to time, heat, light, water, communication, and information. In such circumstances, professional responsibility transcends its purely normative character and becomes a practical capacity of the individual to maintain discipline, quality of performance, communicative reliability, and moral integrity under conditions of prolonged resource scarcity [4; 9].

Accordingly, the analysis of **individual vital competencies** should be conceptualised as the study of an integrated system of interrelated resources—physical, psycho-emotional, cognitive, moral-value, and professional-functional—that define the boundaries of human viability and socio-professional reliability under conditions of chronic instability.

Further analytical relevance is provided by the European competence-based approach to lifelong learning, which conceptualises competencies as an integrated set of knowledge, skills, abilities, and psychological dispositions developed through formal, non-formal, and informal learning. Under conditions of wartime infrastructural disruption, competencies acquire a pronounced security dimension, transforming into mechanisms of life preservation [1; 2].

In this context, Ukraine's experience of prolonged energy collapse, combined with conditions of resistance to military aggression, constitutes a unique empirical foundation for refining and advancing competence-based approaches within a broader European framework, with a particular emphasis on the individual's practical preparedness to act under conditions of systemic crises and multidimensional threats.

Purpose of the study. The purpose of this article is to provide a comprehensive analytical justification of **individual vital competencies** as systemic determinants of security that ensure the preservation of vitality, life sustainability, and professional functionality under conditions of energy collapse, as well as to develop an integrated model of individual vital competencies defining the individual's capacity to act under conditions of chronic vital-crisis instability.

Analysis of recent research and publications. The issue of blackouts (energy collapse) in contemporary scholarly discourse is predominantly examined within technical, energy, managerial, and security-oriented research, where primary attention is devoted to energy system stability, protection of critical infrastructure, risk management, and the minimisation of material and socio-economic losses. In studies on energy security, blackouts are interpreted as indicators of the vulnerability of national and regional systems, as well as factors threatening national and economic security. At the same time, individuals are typically represented as statistical units or passive consumers, lacking agency in responding to crisis situations in overcoming crisis consequences [2; 3].

Within the humanities and social sciences, crisis-related phenomena are analysed through the concepts of resilience, human security, crisis management, and psychosocial resilience. These approaches have significantly broadened the understanding of security by shifting the focus from institutional frameworks to human needs and vulnerabilities. However, most such studies remain conceptually fragmented, focusing either on psychological responses to stress or on community-

level adaptation mechanisms, without developing a comprehensive model of individual life competencies under conditions of prolonged energy instability (energy collapse) [6; 9].

The European competence-based approach to lifelong learning conceptualises competencies as an integrated combination of knowledge, skills, abilities, and psychological dispositions developed across diverse educational and social environments, including formal, non-formal, and informal learning [1].

Nevertheless, these frameworks have largely been formed under conditions of relative infrastructural stability and lack a sufficiently developed crisis-oriented profile“crisis profile” applicable to prolonged wartime infrastructural disruptions, in which competencies acquire not only an educational but also a directly vital-security function. In this regard, there is a growing need to integrate resilience-oriented humanitarian approaches with competency-based logic focused on practical mechanisms of life preservation and sustained professional functioning under conditions of chronic instability [1; 4].

A substantial body of research is devoted to the impact of emergency situations on mental health, professional burnout, and reduced work capacity. These studies emphasise the risks of chronic stress, emotional exhaustion, and maladaptation, which intensify under conditions of prolonged deprivation of essential life-support resources. However, such research typically is grounded in a reactive perspective, focusing on consequences rather than on the preventive development of life competencies as determinants of vital security [5; 7].

In legal and managerial studies, attention is directed towards ensuring the continuity of institutional and labour market functioning under crisis conditions. At the same time, professional responsibility is predominantly examined within a formal-normative framework, without sufficient consideration of the individual’s internal resources, moral-professional qualities, and capacity to maintain professional integrity under conditions of extreme strain. As a result, there remains

a lack of integration between formal requirements for professional performance and the individual's actual vital capacities under conditions of prolonged energy collapse [4; 2].

Overall, the analysis of existing research demonstrates that prolonged blackouts are predominantly conceptualised either as a technical-managerial challenge or as a psychological consequence of crisis conditions. At the same time, the integrated dimension of individual life competencies – that enable individuals to preserve vitality while maintaining professional functionality – remains insufficiently conceptualised. Existing approaches rarely integrate physical, psycho-emotional, cognitive, moral-value, and professional-functional dimensions into a unified analytical framework, despite the fact that these components interact as an interconnected system under conditions of prolonged resource scarcity [4; 9].

This necessitates a shift from a fragmented description of crisis consequences towards modelling an integrated competency-based profile for life preservation, which enables not only adaptation to episodic disruptions but also the maintenance of viability and socio-professional reliability under conditions of chronic instability, which, in wartime contexts, acquires the characteristics of energy collapse [4; 3].

Thus, the current state of research reveals a significant methodological gap between infrastructural, psychosocial, and professional analyses of crisis situations. The issue of comprehensively conceptualising individual life competencies as a systemic response to the multidimensional challenges of prolonged energy collapse remains insufficiently developed. This creates the need for an integrated analytical model that combines physical, psychological, cognitive, moral-value, and professional characteristics of the individual into a unified framework of vital security and life preservation [4; 6]

Problem Statement. Prolonged blackouts in the context of wartime and post-crisis environments should be understood not as episodic disruptions of the habitual rhythm of life, but as a systemic *vital-crisis condition* that transforms the fundamental conditions of individual existence. Within the framework of this study, in order to provide a more precise description of this situation, the term **“energy collapse”** is introduced as an author-defined analytical construct.

Energy collapse is defined as a prolonged or recurrent mode of systemic destabilisation of the energy-based life-support system, which extends beyond the mere interruption of electricity supply and encompasses associated disruptions in heating, water supply, digital infrastructure, as well as the functioning of medical and security services. In this sense, the term “blackout” is inherently limited, as it primarily denotes the absence of electricity supply, whereas “energy collapse” reflects the complex and multidimensional character of wartime infrastructural deprivation [2; 8].

The absence of electricity for a significant portion of the day, disruptions in water supply, limitations in thermal conditions, complications in communication, and restricted access to information generate a multi-layered pressure on the individual, within which their capacity for life preservation, self-regulation, and the performance of socially and professionally significant functions is tested. Under these conditions, the problem of blackouts / energy collapse extends beyond the infrastructural dimension and requires interpretation through the lens of **individual vital security**, encompassing the physical, psychological, moral, and professional dimensions of human existence [6; 9].

This issue becomes particularly acute in the contemporary Ukrainian context, where, during the period of martial law, prolonged blackouts with electricity outages lasting up to 18–20 hours per day have ceased to be isolated occurrences and have instead become a recurring and enforced reality of everyday life. As a result, the absence of light, heat, water supply, and stable communication

is no longer perceived as a temporary disruption of comfort, but is transformed into a persistent mode of existence that requires the continuous mobilisation of the individual's internal resources.

The **key determining factors** are the **duration and systemic nature of such outages,** which fundamentally alter the impact of blackouts on the individual, shifting the problem from the sphere of adaptation to an emergency event to the sphere of life preservation under conditions of chronic instability, which, by its characteristics, approaches the *regime of energy collapse* [3; 5].

The Ukrainian experience cannot be reduced solely to energy instability, as blackouts in Ukraine frequently coincide with other forms of wartime impact, including air raid alerts, missile and drone ("Shahed") attacks, threats to critical infrastructure, and the risk of renewed escalation even in rear regions. Under such conditions, individuals acquire vital competencies not so much from theoretical models as from the practice of everyday self-preservation, shaped under the pressure of real risks to life, health, and dignity.

The empirical dimension of this problem lies in the fact that the population is compelled to undergo a process of **"learning through crisis,"** in which each new wave of attacks and outages becomes a situation of accelerated formation of skills, attitudes, and behavioural algorithms aimed at preserving both individual viability and social functionality [3; 10].

As a consequence, Ukrainian society has been compelled to become a space of accelerated formation of life competencies that, in other European countries, have not yet been tested under conditions of a totalised vital-crisis reality. This assertion is not rhetorical in nature and does not claim normative or moral generalisation; rather, it reflects an empirically observable difference in the scale and duration of exposure to wartime infrastructural risks within the European context.

The Ukrainian experience thus objectively complements European competence frameworks, which have been formed under conditions of relative infrastructural stability and are not designed for systemic and prolonged crises of a wartime nature [1; 2]. Accordingly, within this study, Ukraine is conceptualised as a distinctive “laboratory” of life competencies, while the European Union may be regarded as a potential beneficiary of the generalised experience of life preservation and the maintenance of professional functionality under conditions of multidimensional threats.

This approach is consistent with the European understanding of competencies as an integrated combination of knowledge, skills, and psychological dispositions, as well as with the principle that key competencies are developed throughout life through formal, non-formal, and informal learning across diverse environments, including family, school, the workplace, and the community.

In the Ukrainian context, informal and non-formal learning has taken the form of the practical acquisition of self-preservation strategies, where real threats to infrastructure, prolonged outages, and recurring air raid alerts give rise to stable patterns of life organisation, resource management, time planning, and the maintenance of work capacity. This implies that the competence-based framework inherent in European educational discourse acquires a unique empirical dimension in the Ukrainian case, as life competencies are developed under conditions of enforced instability, where errors may carry direct consequences for health and life [1; 3].

Under these conditions, a significant proportion of the population is compelled to combine the provision of basic self-preservation needs with the fulfilment of labour and professional responsibilities, often in the absence of adequate infrastructural support. Work performed in darkness, in cold environments, and under conditions of limited access to information and

communication tools becomes an everyday practice, thereby bringing to the forefront the issue of the individual's internal readiness to act responsibly while maintaining professional functionality and social reliability.

In the absence of external guarantees of stability, it is precisely life competencies that determine the limits of work capacity, endurance, and the ability to prevent the degradation of professional roles, as well as to preserve moral integrity under conditions of scarcity, uncertainty, and heightened risk [4; 2].

Despite these risks, **the accumulated lived experience of individuals who have functioned over extended periods under conditions of systemic blackouts and wartime threats demonstrates the formation of informal yet practically effective behavioural models** grounded in self-discipline, responsible planning, moral maturity, and a readiness to accept constraints.

At the collective level, this experience manifests as the capacity for self-organisation, mutual support, rational allocation of resources, and rapid restoration of functioning following each new episode of destruction or disruption. At the individual level, these practices constitute manifestations of resilience that emerge "from below" and are validated through action rather than declarative norms, thereby conferring particular value upon this experience as an empirical foundation for the scientific conceptualisation of **individual vital competencies** [3; 10].

In this context, the central scientific problem lies in the absence of an integrated model of life competencies capable of ensuring not only physical survival, but also the preservation of personal integrity, dignity, and professional functionality under conditions of prolonged deprivation of essential life-support resources and persistent security threats.

A blackout thus functions as an anthropological test, within which the actual level of individual resilience is revealed, along with the individual's readiness for

responsible decision-making, their capacity to act under pressure, and, at the same time, to maintain social trust, professional discipline, and moral responsibility.

For this reason, within the framework of this study, there arises a need to develop a scientific and analytical model of life competencies as a **meta-competency framework** that integrates physical endurance, psycho-emotional regulation, moral responsibility, professional resilience, and the capacity to act under conditions of scarcity, conceptualising it as a **supra-systemic category of vital security** [6; 4].

The first logical block of the problem is associated with the **physical-vital dimension** of human functioning under conditions of prolonged energy collapse, which, in wartime, is intensified by additional risk factors, including the need for rapid relocation to shelters, disruption of sleep patterns due to air raid alerts, and physical exhaustion resulting from prolonged stress.

This refers to the body's capacity to adapt to decreased temperatures in residential and working environments, a lack of adequate lighting, limited access to water, and disruptions in nutrition and recovery routines. In this context, physical preparedness should not be reduced to athletic endurance; rather, it is understood as a fundamental life competency that includes the ability to rationally allocate energy, maintain a basic level of physical condition, avoid hypothermia and overexertion, prevent injuries in darkness or during forced movement, and ensure minimal conditions for bodily safety.

Failure to adapt at this level results in rapid exhaustion, reduced work capacity, and an increased risk of illness, which renders the fulfilment of professional responsibilities impossible and undermines the overall viability of the individual, thereby creating the preconditions for vital vulnerability [9; 5].

The second logical block of the problem encompasses the **psychological and mental dimension** of life competencies, which, under conditions of systemic energy collapse and wartime threat, acquires critical significance. Chronic

uncertainty, disruption of habitual life rhythms, lack of control over events, and the constant threat of repeated outages, air raid alerts, and attacks give rise to a state of prolonged psycho-emotional strain.

Under such conditions, psychological resilience ceases to be an abstract characteristic and becomes a practical capacity of the individual to maintain inner balance, regulate emotional responses, prevent panic, apathy, or aggressive breakdowns, and sustain the ability to engage in purposeful activity. Mental health should be understood as an integral capacity to maintain cognitive clarity, emotional stability, and motivation for action even in the absence of comfortable conditions, as well as the ability to preserve meaning-oriented frameworks and prevent the degradation of personal autonomy [5; 9].

Within the European competence-based approach, the importance of internal resilience, as well as the ability to manage uncertainty and stress, is explicitly recognised as part of personal and social competence; however, in the Ukrainian context, these capacities undergo particularly intensive practical testing. Volitional qualities, self-discipline, and the capacity for self-regulation become decisive factors that enable the individual to maintain their life trajectory and preserve readiness for the responsible fulfilment of professional functions under conditions of multidimensional exhaustion [1; 5].

The third logical block of the problem is associated with **cognitive-orientational competencies**, which, under conditions of blackouts and wartime threats, acquire particular significance due to the combination of information scarcity with information overload and manipulative influences. Disruptions of established communication channels, limited access to official information, instability of communication networks, as well as the spread of rumours and anxiety-inducing messages, create a situation in which the ability to orient oneself in time, space, and events becomes a critically necessary competency.

This involves not only physical orientation in darkness, in public spaces, or during movement to shelters, but also the cognitive capacity to correlate incoming information with reality, distinguish reliable data from manipulation, make well-informed decisions under conditions of uncertainty, and maintain rational judgement in critical situations [1; 6].

The ability to think critically, make decisions, overcome difficulties, and manage information is directly aligned with the European understanding of lifelong learning competencies; however, the Ukrainian context demonstrates that these abilities perform not only an educational but also a vital-security function. Within the sphere of professional activity, cognitive-orientational competencies ensure the capacity to maintain effectiveness, organise working time under unstable conditions, sustain reliable communication with colleagues and clients, and avoid errors caused by stress and information deficits [1; 4].

The fourth logical block of the problem concerns the **moral-value and ethical-professional dimension** of life competencies, which, in the context of war, acquires particular acuteness due to the risks of moral fatigue, social frustration, a decline in levels of trust, and the temptation to justify behaviour through a "survival mode" rationale. Under conditions of prolonged energy collapse and resource scarcity, the likelihood of moral disorientation, interpersonal conflict, violations of norms of mutual respect and mutual support, as well as the erosion of professional ethics, significantly increases [6; 3].

In this context, the moral and professional qualities of the individual should be conceptualised as a key element of **vital security**, determining the boundaries of acceptable behaviour under conditions of constraint, while at the same time ensuring the preservation of human dignity, social trust, and professional reputation. Moral responsibility, in this regard, manifests itself in the capacity to act with integrity in the absence of external control, to fulfil obligations, to refrain

from shifting responsibility for one's decisions onto circumstances, and to sustain cooperation and solidarity, which are critical for community resilience [4; 6].

The importance of attitudes such as cooperation, perseverance, integrity, as well as the willingness to overcome prejudice and seek compromise, is explicitly emphasised within the European understanding of social competence. This provides grounds for interpreting moral-professional qualities not as a secondary "ethical superstructure," but as a core component of practical life preservation in conditions of crisis.

The fifth logical block of the problem encompasses **professional-functional competencies** of the individual, which ensure the capacity to perform work-related responsibilities under crisis conditions. Prolonged blackouts significantly transform working conditions, complicating the organisation of working time, access to technical resources, and communication processes, while also creating new risks for the quality and safety of professional performance.

During the period of martial law, these challenges are often intensified by the need to respond to air raid alerts, interrupt work processes due to the threat of attacks, and combine professional responsibilities with caregiving functions and the provision of basic life-support needs for the family [2; 8].

Under such circumstances, professional responsibility acquires a renewed meaning, combining the requirement for performance outcomes with the need to adapt work processes to conditions of resource scarcity, while simultaneously preserving professional dignity and ethical standards under increased workload. The ability to maintain work capacity, plan activities under conditions of instability, adhere to labour discipline, and ensure an acceptable quality of outcomes becomes an indicator of both personal and professional maturity [4; 1].

Within this analytical framework, competencies of self-management, effective time and information management, internal resilience, as well as the ability to manage one's learning and career development—identified as

components of personal and social competence within the European framework – acquire, for Ukrainian workers, a distinctly practical dimension as instruments for maintaining professional functionality under conditions of blackouts / energy collapse.

A distinct component of the problem statement concerns the issue of the **institutionalisation of vitality and vital security** within the lifelong educational process of each individual as a mechanism for the transmission of life competencies. The European logic of key competencies is grounded in the premise that education and training should ensure the fullest possible development of each individual's potential, while states are encouraged to support high-quality education, schooling, vocational training, and continuous lifelong learning.

In the Ukrainian context of martial law, this principle acquires additional significance: education must encompass not only academic knowledge, but also life competencies related to self-preservation, psychological resilience, moral responsibility, and professional functionality under conditions of vital-crisis situations [1; 10].

Vital competence, as a supra-systemic category, may be conceptualised as a **meta-competency framework** capable of integrating physical endurance, psycho-emotional regulation, moral responsibility, professional resilience, and the capacity to act under conditions of scarcity, thereby ensuring not only adaptation to risk, but also the preservation of dignity, autonomy, and social reliability [4; 6].

In this regard, the Ukrainian experience of prolonged blackouts and wartime threats may be conceptualised as a practical basis for the development of recommendations within a broader European context, particularly with respect to preparing populations for crisis modes of life activity, enhancing individual and collective resilience, and strengthening self-preservation competencies under conditions of large-scale infrastructural disruption associated with prolonged interruptions in energy supply, water provision, heating, communication, and the

functioning of other vital systems that ensure the basic conditions of human existence and socio-professional activity [2; 3].

In this study, blackout is not treated as an end in itself or as the sole object of analysis, but rather as a representative example of **vital-crisis practice** that reveals a systemic need for an integrated model of individual life competencies capable of preserving vitality and professional functionality under prolonged conditions of resource scarcity and security threats, which, in its comprehensive manifestation, may be described as energy collapse [4; 9].

Thus, the formulation of the problem enables the development of a scientific and analytical model of **individual life competencies** capable of sustaining vitality and professional functionality under conditions of prolonged blackouts and related wartime infrastructural risks. This model is grounded in the integration of physical-vital, psychological, cognitive-orientational, moral-professional, and professional-functional components, complemented by an educational mechanism for the transmission and consolidation of these competencies throughout the lifespan.

Taken together, these components form the foundation of life preservation as a conscious, responsible, and socially significant process that ensures not only the reduction of vital vulnerability, but also the preservation of human dignity, professional reliability, and the resilience of communities in situations of multidimensional threats [4; 3].

Conclusions and Recommendations. As a result of the conducted scientific and analytical inquiry, it has been established that prolonged energy collapse in wartime and post-crisis environments should be understood not merely as an infrastructural failure, but as a multidimensional *vital-crisis condition* that simultaneously affects the physical conditions of existence, psycho-emotional balance, moral-value orientation, and professional functionality of the individual [3; 9].

In the Ukrainian context, energy collapse acquires particular intensity due to its overlap with air raid alerts, missile and drone attacks, threats to critical infrastructure, and the recurring nature of instability regimes, which leads to the formation of life competencies primarily not at the theoretical level, but through the practice of everyday self-preservation.

This experience demonstrates that **vital competencies** emerge as a form of applied knowledge-in-action that integrates survival skills, self-regulation, and the maintenance of socio-professional reliability, rather than as an abstract declaration of resilience [10; 5].

The obtained findings make it possible to substantiate the thesis that **individual vital competencies** constitute a key resource for the preservation of vitality, professional responsibility, and life sustainability under conditions of prolonged energy collapse, as well as to justify an integrated model of competencies that ensures both human viability and professional functionality in vital-crisis situations [4; 1].

The proposed model is meta-competency in nature and is structured around five interrelated components:

(1) **physical-vital competencies** (adaptation to cold, lack of adequate lighting, and limited access to water; maintenance of bodily safety; prevention of exhaustion);

(2) **psychological and mental competencies** (self-regulation, stress management, preservation of motivation and cognitive clarity);

(3) **cognitive-orientational competencies** (critical thinking, correlating information with reality, navigation in time, space, and events, decision-making under conditions of limited data);

(4) **moral-professional competencies** (ethical responsibility, professional integrity, social trust, and solidarity under conditions of resource scarcity);

(5) **professional-functional competencies** (adaptation of work processes, discipline, maintenance of work quality, and preservation of professional dignity under conditions of instability).

Taken together, these components form **vital competence** as a supra-systemic category that integrates physical endurance, psycho-emotional regulation, moral responsibility, professional resilience, and the capacity to act under conditions of scarcity.

Within the framework of European competence frameworks, it is substantiated that the Ukrainian experience of prolonged energy collapse and wartime infrastructural impacts objectively complements the competence-based approach, as it demonstrates practical scenarios for which frameworks developed under conditions of relative stability require further refinement and crisis-oriented "profiling" [1; 2].

The European understanding of key competencies as a combination of knowledge, skills, and psychological dispositions developed through formal, non-formal, and informal lifelong learning provides a methodological foundation for integrating components of **vital security** and practical preparedness for prolonged crises into educational policies [1; 3].

It is particularly important that, within the domain of personal and social competence, the need for resilience and the capacity to act under conditions of uncertainty and stress is explicitly articulated, with emphasis placed on effective time and information management, internal self-regulation, and the ability to manage one's own educational and professional trajectory—elements which, under conditions of energy collapse, are transformed from the domain of "useful skills" into determinants of life preservation.

On the basis of the foregoing, it is appropriate to formulate the following proposals.

First, for Ukraine, as well as for the European Union taking into account the Ukrainian empirical experience, it is advisable, at the level of national, regional, and institutional education and security policy, to institutionalise **vitality and vital security** as a practice-oriented, interdisciplinary component of lifelong learning, which should be integrated into school education, vocational training, corporate programmes, and civic education [1; 10]. The content of such a component should encompass: basic self-preservation algorithms (water, heat, nutrition, sleep, hygiene), psycho-emotional self-regulation under conditions of threat, practices of critical thinking and information hygiene, ethical standards of behaviour under conditions of resource scarcity, as well as the organisation of work under conditions of systemic infrastructural instability.

Second, it is advisable to develop a standardised **"profile of vital competence"** as a set of learning outcomes for different age and professional groups, which would enable the assessment of the formation of key elements of life preservation and professional functionality under crisis conditions [1; 4].

Third, it is necessary to establish mechanisms for supporting non-formal and informal learning that spontaneously emerges in crisis contexts through methodological guidelines, certification modules, and the training of educators and trainers, since in Ukraine the high effectiveness of **"learning through crisis"** has been empirically demonstrated and therefore requires scientific systematisation and broader dissemination [3; 10].

Fourth, within the context of European Union policies, it appears appropriate to develop a set of **competence-oriented recommendations** aimed at enhancing population preparedness for wartime infrastructural challenges, drawing on the Ukrainian practical experience of overcoming systemic crises. Within the structure of these recommendations, **energy collapse** should be defined as one of the baseline stress scenarios characterised by a deficit of essential life-support resources [2; 3].

The content of such recommendations should include: the development of resilience and coping skills for managing uncertainty and stress; the advancement of practices for effective time management and the regulation of information flows; the reinforcement of the capacity for critical thinking and decision-making under conditions of limited data; and the strengthening of moral-value foundations of social trust, cooperation, and integrity, which ensure the capacity of communities for coordinated and solidarity-based interaction under crisis conditions.

The proposed logic for structuring these recommendations makes it possible to utilise response models developed in Ukraine as a source of empirically validated practices and instructional case studies for assessing the effectiveness of competencies in situations of prolonged resource constraint.

Fifth, it is proposed to consider the inclusion, within European lifelong learning policies, of a distinct cross-sectoral domain provisionally defined as **"vital security and life preservation in vital-crisis situations,"** which would integrate educational, social, medical-psychological, and civil security components [1; 9].

Such a domain is logically aligned with the overarching objective of the competence-based approach – to ensure the full realisation of individual potential and to support systems of education and lifelong learning—while at the same time complementing them with practical dimensions of crisis preparedness.

Within this domain, it is advisable to develop adaptive modules tailored to different professional sectors (public administration, healthcare, education, critical services, business), given that professional responsibility in crisis conditions is not merely a legal requirement, but also a function of the individual's internal resources and moral-professional qualities.

Overall, the formulated conclusions and proposals confirm that energy collapse – as a representative example of prolonged infrastructural disruption in a

wartime environment—reveals the necessity of reorienting research and practice from post hoc response towards the preventive formation of life competencies within the framework of **vital security**.

On this basis, the integrated model of competencies substantiated in this article provides grounds for interpreting life preservation not as a situational response, but as a systemic capacity of individuals and communities to sustain vitality, dignity, and professional functionality under conditions of prolonged vital-crisis situations [4; 6].

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