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MEASURING RENTAL FEASIBILITY: A MULTIDIMENSIONAL ALTERNATIVE TO HRAI

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ABSTRACT

The aim of this study is to present and empirically validate the Rental Feasibility Index (RFI), a multidimensional measure of the real capacity to rent a dwelling from the perspective of households. The index integrates four components: affordability, availability of rental offers, upfront costs, and financial stability. The study also provides a critical extension of the commonly used Housing Rental Affordability Index (HRAI), highlighting the need to incorporate additional dimensions of rental feasibility. The analysis uses monthly data for the Polish rental market from 2021 to 2026, enabling an assessment of the dynamics of the RFI, its components, and their interrelationships. The results show that the RFI effectively captures both short-term shocks and long-term trends. In 2022, the index recorded a sharp decline, driven mainly by a collapse in rental offer availability and a deterioration in household financial stability. In the following years, all components gradually recovered, with affordability and upfront costs exerting the strongest influence on the RFI. A comparison with the traditional HRAI revealed a moderate relationship, confirming that the two indicators capture different aspects of rental market conditions. Despite certain limitations, the RFI offers a useful tool for analysing the rental market and supporting housing policy.

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1. Introduction

Analysing the situation of tenants in contemporary housing markets requires tools capable of capturing both the economic and structural conditions that shape rental processes. The literature is dominated by two main approaches: affordability, which focuses on the relationship between household income and rental costs (Hulchanski, 1995; Stone, 2006), and availability, which refers to the supply of dwellings accessible at a given moment (Besbris et al., 2021). Both approaches are widely used, yet their combined application does not always provide a full understanding of tenants' circumstances. As previously noted, "the possibility of renting housing is the ability to carry out a rental transaction that will ensure habitation that coincides with human needs" (Derkacz, 2025). This implies that real rental feasibility is not a simple function of prices and incomes but the outcome of a complex decision-making process.

In response to the need for a synthetic measure of rental conditions, the Housing Rental Affordability Index (HRAI) was proposed. It integrates three key elements: tenant incomes, rent levels and the current supply of rental offers. HRAI represented an important step towards combining the fundamental determinants of tenants' situations and enabled comparisons of rental conditions over time and across markets. Its construction rests on the intuitive assumption that rental feasibility is highest where the income-to-rent ratio is favourable and the availability of offers is high.

At the same time, the increasing complexity of rental markets has revealed the limitations of approaches based solely on affordability and availability. In many cases, a paradox of rental feasibility emerges: markets with relatively high availability and moderate rents may still exhibit low real rental feasibility. This results from factors not directly visible in simple price relationships, such as upfront costs, perceptions of financial stability, the match between available offers and household

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needs, or institutional barriers (Desmond, 2012; Haffner & Boumeester, 2015). These phenomena are particularly evident during periods of market tension, when traditional indicators fail to fully reflect the dynamics occurring on both the demand and supply sides.

In this context, there is a need for a multidimensional approach that captures not only economic conditions but also transactional, liquidity-related and subjective factors. The aim of this article is to present such an approach and to demonstrate that rental feasibility is a more complex phenomenon than suggested by indicators based solely on price relationships. The article proposes the Rental Feasibility Index (RFI) as a multidimensional alternative to one-dimensional measures, arguing that a comprehensive assessment of tenants' situations requires integrating multiple dimensions of the rental transaction.

The following sections provide a critical analysis of the HRAI framework, justify the need for a multidimensional approach and present the formal definition of the RFI. The article then reports the results of the empirical validation of the index and discusses its implications for rental market research and housing policy.

2. Material and methods

2.1. Literature background: from affordability to multidimensional rental feasibility

Research on rental housing affordability and availability has traditionally focused on the cost dimension, treating the rent-to-income relationship as the primary indicator of household burden. Classical approaches such as the rent-to-income ratio, housing cost burden or the 30% rule have dominated the literature since the 1970s, forming the foundation of analyses conducted by Stone (2006), Hulchanski (1995), Bogdon and Can (1997), Gan and Hill (2009) and Kutty (2005). Although these indicators are intuitive and easy to apply, their main limitation lies in reducing the complex rental process to a single dimension – the relationship between costs and income – which does not capture the full structure of barriers faced by tenants. Contemporary research confirms these limitations, emphasising that affordability is a multidimensional phenomenon and cannot be reduced solely to the interaction between incomes and rents. Recent studies highlight the importance of spatial, institutional and qualitative factors (Kettunen & Ruonavaara, 2021), as well as the growing role of economic uncertainty and inequality in shaping rental accessibility (Ben-Shahar et al., 2020; Martínez del Olmo, 2024). The literature also includes proposals for multidimensional approaches that integrate costs, housing quality and household financial stability (Parys, 2025), further underscoring the need to move beyond one-dimensional affordability metrics.

In parallel, a substantial body of research has developed around housing stock availability, where vacancy rates (Nowak & Gluszak, 2025), supply elasticity, listing exposure times and spatial mismatches between demand and supply have played a central role. Studies by Glaeser and Gyourko (2003), Wheaton (1990), Arnott (1987) and Quigley (2004) emphasised that limited availability of rental listings may constitute a barrier as significant as high rents, and in some market segments even more important. Yet this strand of research also tended to rely on one-dimensional approaches focused on supply rather than on the interaction between different types of barriers. Contemporary studies confirm that supply constraints remain one of the key factors shaping housing availability. More recent analyses show that supply rigidity and spatial regulations lead to persistent housing shortages, particularly in large cities with strong demand pressures (Gyourko et al., 2013; Hilber & Vermeulen, 2016). Research also indicates that limited availability results not only from construction levels but also from spatial mismatches and institutional barriers that hinder effective allocation of the housing stock (Hsieh & Moretti, 2019). Additional contributions highlight heterogeneous effects of supply growth and question the simple link between construction activity and improved housing availability (Been et al., 2019). In the Polish spatial planning system, attempts have been made to overcome supply barriers through lex specialis regulations, such as the so-called Housing Special Act (Lex Developer); however, their real impact on increasing supply in the largest cities is assessed as moderate (Załeczna & Antczak-Stępniak, 2022).

Another important area of research concerns liquidity constraints and upfront costs, including deposits, agency fees, transaction charges and other expenses incurred before signing a rental contract. Economic literature – from the classical work of Linneman and Wachter (1989) to more recent analyses by Haurin and Rosenthal (2007) and Goodman and Mayer (2018) – has shown that liquidity barriers may exclude households from the rental market even when rents are relatively affordable. Despite this, systematic

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attempts to incorporate these costs into synthetic measures of rental feasibility have been largely absent.

Over the past decade, increasing attention has been paid to institutional, perceptual and behavioural barriers. Studies by Besbris and Faber (2017), Scanlon and Whitehead (2008), Stephens (2020) and Hulse (2011) demonstrated that tenant selection, discrimination, income uncertainty, lack of rental stability and risk perception can significantly restrict entry into the rental market, regardless of rent levels or listing availability. This line of research emphasised that the rental process is complex, multi-stage and characterised by frictions that cannot be reduced to simple price relationships (Desmond & Gershenson, 2016).

Despite extensive literature in each of these areas, a tool capable of integrating different types of barriers into a coherent, multidimensional analytical framework has been lacking. Existing indicators – whether cost-based or supply-based – have been unable to capture interactions between affordability, availability, liquidity, financial stability, institutional requirements and risk perception. Moreover, most existing approaches rely on annual or cross-sectional data, which prevents monitoring changes over time and responding to short-term market pressures.

The HRAI concept emerged as an initial attempt to move beyond one-dimensional approaches by combining affordability with supply availability. However, only the subsequent development of this concept into AVUSEC – a six-dimensional theoretical framework encompassing affordability, availability, upfront costs, financial stability, eligibility and confidence – made it possible to organise the full spectrum of rental barriers identified in the literature. The Rental Feasibility Index (RFI) constitutes an operational implementation of this framework, using four dimensions for which reliable monthly data are available. In doing so, it integrates insights from economic, institutional and behavioural research, creating a tool capable of monitoring real rental feasibility in real time.

2.2. Conceptual limitations of the HRAI indicator

The Housing Rental Affordability Index (HRAI) integrates three fundamental elements of rental market conditions: household incomes, rent levels and the current supply of rental offers. Its construction draws on the classical affordability approach, in which the income-to-housing-cost ratio serves as the primary measure of rental accessibility. By incorporating the supply of rental offers, HRAI aligns with the availability literature, which emphasises the spatial and temporal accessibility of dwellings.

Despite its intuitive and synthetic nature, HRAI remains limited to price-income relations and static measures of supply. As a result, it does not capture several factors identified in the literature as crucial for real rental feasibility. These include:

- upfront costs (deposits, commissions, transaction fees),
- liquidity constraints,
- perceived and objective financial stability,
- institutional barriers,
- mismatches between available dwellings and household needs and preferences (Abdulkadiroğlu & Sönmez, 1999; Orozco Martinez & Gil-Alonso, 2024; Zheng et al., 2006).

These factors shape the ability of households to enter and sustain a rental contract, and their omission may lead to an overestimation of rental feasibility in situations where affordability and availability appear favourable, yet real transactional barriers remain high.

2.3. Justification for a multidimensional approach

In response to the limitations of one-dimensional approaches, the AVUSEC concept was proposed – a six-dimensional theoretical framework describing rental feasibility as the outcome of interactions between economic, market, liquidity, stability, institutional and perceptual factors. The framework comprises six elements:

- (A) affordability,
- (V) availability,
- (UC) upfront costs,
- (FS) financial stability,
- (E) eligibility conditions,
- (C) confidence.

AVUSEC serves as a conceptual structure that organises the full spectrum of rental barriers. However, due to the availability of high-frequency data, the operational construction of the Rental Feasibility Index (RFI) includes only four dimensions that can be measured monthly: A, V, UC and FS. These dimensions reflect both economic conditions and liquidity- and stability-related constraints that determine households' ability to complete a rental transaction. The remaining two AVUSEC elements – eligibility (E) and confidence (C) – retain interpretative and analytical relevance, enabling contextualisation of regional and institutional differences, but they are not included in the operational RFI formula because high-frequency data enabling

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their regular measurement are not available. It should be emphasized that the design of the RFI allows for the analysis of rental feasibility at a high spatial resolution, encompassing every voivodeship city, while the underlying database enables analysis even at the level of individual counties in Poland. Although this article focuses primarily on the presentation of the RFI methodology itself, rather than a detailed statistical report on the housing situation, the index's operationalization accounts for the significant polarization of local markets by employing differentiated component weights for specific market segments. This approach facilitates a precise mapping of the local structure of rental barriers, establishing the RFI as an operational and empirical implementation of the AVUSEC framework.

2.4. Construction of the Rental Feasibility Index

Each RFI component is defined as a monthly indicator describing a specific dimension of rental feasibility.

- Affordability (A)

$$A_t = \frac{HI_t}{RP_t} \quad (1)$$

where HI_t denotes average household income and RP_t denotes average asking rents.

- Availability (V)

$$V_t = \frac{rs_t}{rp_t} \times MQ_t \quad (2)$$

where rs_t is the index of changes in rental supply, rp_t is the index of changes in asking rents and MQ_t (Match Quality) represents the share of offers meeting typical demand-side criteria.

Match Quality (MQ) reflects the degree to which rental listings align with tenants' preferences. In the current version of the index, MQ is estimated empirically based on responses to the survey question: "To what extent does the dwelling meet your expectations regarding the following aspects?" (0–10 scale). MQ represents the average evaluation of alignment across ten key aspects of dwelling choice: preferred location, equipment, floor level, number of rooms, building type, rental contract conditions, relationship with the landlord, perceived rental stability, digital attributes and availability of online services, and environmental and sustainability considerations. The MQ values used in the analysis originate from an original survey of rental tenants in Poland and differ across city groups (e.g. 10M: 0.68; 5M: 0.64; Warsaw: 0.65; overall: 0.66). MQ serves as a corrective factor within the V component, scaling the availability of listings by their actual usefulness for households.

- Upfront Costs (UC) measure the liquidity barrier associated with entering the rental market. UC captures the relationship between households' propensity to save and the typical costs incurred at the start of a tenancy:

$$UC_t = \frac{SP_t}{3 \times RP_t} \quad (3)$$

where SP_t denotes households' short- and medium-term saving propensity, estimated as the average of current and expected saving capacity. The adoption of the 3×RP value is based on an analysis of operational data from the rental market, including information provided by simpl.rent – the largest tenant-verification and rental-insurance platform in Poland. These data indicate that typical upfront costs consist of three elements of comparable magnitude: the security deposit (≈1×RP), the agent's commission (≈1×RP), and the first month's rent together with transaction-related charges (≈1×RP). The value of SP_t reflects households' current and expected ability to save, calculated as the average of the present and future assessments of saving propensity.

- Financial Stability (FS) reflects households' assessment of their financial stability in line with the methodology of Statistics Poland (GUS). For the purposes of the Rental Feasibility Index, FS is understood as a synthetic financial-stability indicator calculated as the average of two components:

$$FS_t = \frac{CFS_{B,t} + CFS_{P,t}}{2} \quad (4)$$

where $CFS_{B,t}$ represents households' assessments of changes in their financial situation over the past 12 months, and $CFS_{P,t}$ captures expected changes in the financial situation over the next 12 months. FS is subsequently normalised using min–max scaling, which transforms it into the [0,1] range and ensures comparability with the remaining RFI components.

In the current version of the RFI, component weights are no longer based on expert judgement but on an empirical estimation procedure drawing on the results of a nationwide survey of rental tenants in Poland. Respondents evaluated the strength of twelve barriers limiting their ability to rent, answering the question: "To what extent do the following factors restrict your ability to rent a dwelling?" The analysed barriers included: availability of dwellings, rental costs, upfront fees, diversity of listings, clarity of rules, tenant protection, fairness of rental practices, technical condition, exclusion of specific groups, financial uncertainty, public support and rental stability.

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The weighting procedure was carried out on the basis of respondents' assessments of these twelve rental barriers. In the first step, an NPS value was calculated for each barrier, treating more negative results as an indication of stronger limitations on rental feasibility. These values were then transformed by defining barrier intensity as the inverse of NPS, which produced a positive scale in which higher values correspond to stronger barriers. In the next step, each barrier was assigned to one of the four operational RFI components: rental affordability (A), supply availability (V), upfront costs (UC) and financial stability (FS). For each component, the total barrier intensity was calculated by aggregating the values assigned to its category. The final step involved rescaling these aggregated intensities so that their sum equalled 1 within each city group. This produced the final RFI weights, reflecting the relative strength of rental barriers across different market segments. The resulting weights differ between segments, capturing the heterogeneous structure of rental barriers across the Polish housing market.

Table 1

Weights of RFI Components Across Housing Market Segments

Market segment	A (rental affordability)	V (supply availability)	UC (upfront costs)	FS (financial stability)
10M cities	0,4008	0,3211	0,1391	0,1391
5M cities	0,3624	0,2773	0,1638	0,1965
Warsaw	0,3106	0,3540	0,1615	0,1739
Overal (Poland)	0,3718	0,3078	0,1525	0,1679

Source: own study.

Thus, the RFI takes the form:

$$RFI_t = w_A A_t + w_V V_t + w_{UC} UC_t + w_{FS} FS_t \quad (5)$$

Empirical estimation of the component weights makes it possible to capture real differences in the structure of rental barriers across city groups and enhances the interpretative validity of the index. The application of linear component aggregation (weighted sum) in the construction of the RFI is driven by the aim of ensuring methodological transparency and providing a measure with high interpretive utility for housing policy. Although this approach allows for mathematical substitutability between dimensions, this risk is mitigated using empirical weights determined based on the actual intensity of barriers reported by tenants. Consequently, the index prioritizes factors of critical importance for transaction feasibility (such as affordability and supply availability), ensuring that a drastic decline in these factors has a decisive impact on the final index value, thereby limiting the influence of supplementary components. To reduce short-term volatility, a three-month moving average was applied:

$$RFI_t^{AVG3M} = \frac{RFI_{t-2} + RFI_{t-1} + RFI_t}{3} \quad (6)$$

This procedure improves the readability of trends without altering the structural properties of the index.

3. Results

The analysis of the Rental Feasibility Index (RFI) is based on monthly data for the Polish rental market for the years 2021-2026, obtained from three main sources. Market data on the number of active rental listings and asking rents were sourced from Otodom.pl, one of the most comprehensive databases on rental supply and pricing in Poland. The use of data from online listing platforms as a reliable source for monitoring rent dynamics is widely justified in recent literature, particularly in the context of the limited availability and significant lags in the publication of Polish transactional data (Hebdzyński, 2024). Information on households' perceived saving propensity and assessments of their current and expected financial situation was drawn from the consumer sentiment surveys conducted by Statistics Poland. In addition, average monthly wages in the enterprise sector, used in the affordability component, were taken from monthly Statistics Poland publications.

3.1. RFI dynamics in 2021-2026

Monthly values of the RFI and their three-month moving averages (RFI_AVG3M) indicate a clear cyclical pattern in rental feasibility in Poland between 2021 and 2026 (Fig. 1). The year 2021 was characterised by stable and moderate index values, with monthly observations oscillating around 0.55–0.66 and the smoothed RFI_AVG3M remaining within the 0.55–0.60 range. On this basis, an interpretative benchmark corresponding to the median value of the baseline year (≈ 0.61) was established.

In 2022, a sharp decline in the RFI is observed, particularly between March and August. Monthly values fell to 0.25–0.35, while RFI_AVG3M decreased to 0.29–0.37, marking the most pronounced downturn in the entire series. This decline reflects the simultaneous

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collapse in listing availability and the deterioration of households' financial sentiment. In 2023, rental feasibility began to recover gradually, although with considerable volatility. Monthly RFI values ranged between 0.40 and 0.60, and RFI_AVG3M increased from around 0.45 at the beginning of the year to approximately 0.55 by its end. This recovery was driven by improving listing availability and stabilising financial sentiment. In 2024–2025, RFI values stabilised at moderate to high levels. RFI_AVG3M rose from around 0.60 at the start of 2024 to 0.74–0.75 by late 2025, indicating a sustained improvement in rental conditions in a multidimensional perspective. In 2026, the index reached its highest values across the entire study period. Monthly RFI exceeded 0.80, and RFI_AVG3M increased to 0.82–0.83, confirming that the rental market entered a phase of expansion and high rental feasibility.

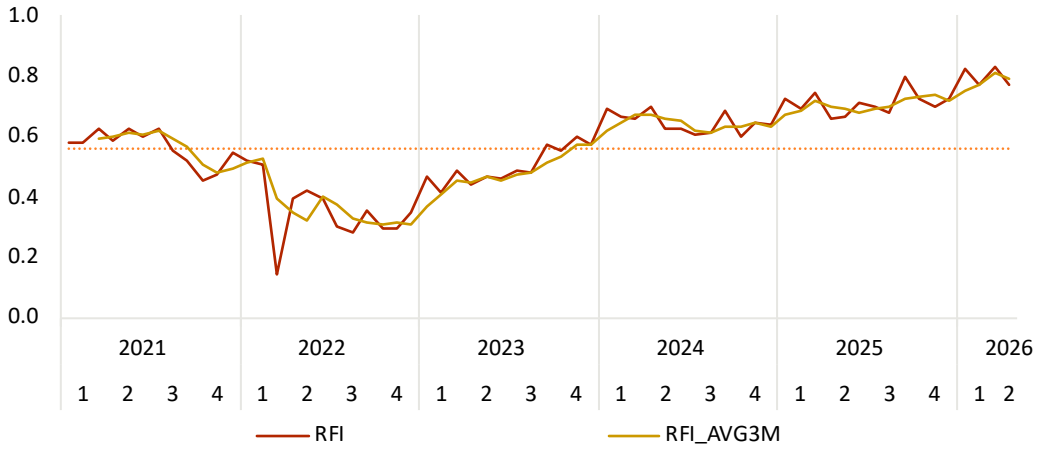


Fig. 1. Rental Feasibility Index, monthly values (RFI) and 3-month moving averages (RFI_AVG3M), total housing stock, Poland.
Source: own study.

3.2. Dynamics of RFI components

Changes in the RFI values reflect the differentiated dynamics of its four components: upfront costs (UC), rental affordability (A), listing availability (V) and households' financial stability (FS). In 2021, all components remained at moderate or high levels. Affordability (A) ranged between 0.35 and 0.61, availability (V) between 0.42 and 0.65, and financial stability (FS) reached values between 0.54 and 0.94. Upfront costs (UC) remained stable within the 0.14–0.67 range. This configuration supported the moderate stability of the RFI (Fig. 2).

In 2022, three components (A, V and FS) experienced a sharp downturn, with availability and financial sentiment falling to exceptionally low levels. UC remained relatively stable, indicating that liquidity barriers were not the main constraint during the shock. In 2023, the components began to recover: availability improved most rapidly, FS strengthened, A recovered more slowly and UC increased gradually. In 2024–2025, all components stabilised at moderate or high levels, signalling a broad improvement in rental conditions. In 2026, UC, A and FS reached very high values, while availability remained strong, resulting in the highest RFI levels in the entire period and marking the market's transition into an expansion phase.

3.3. Correlations between RFI and its components

The correlation analysis between the RFI and its components indicates a clearly differentiated strength of associations (Fig. 3). The strongest relationships are observed for upfront costs (UC) and rental affordability (A), both of which display very high consistency in the direction and magnitude of changes relative to the RFI. In both cases, the relationship is almost linear, and increases in component values translate into proportional increases in the index. This implies that variation in UC and A explains the largest share of RFI dynamics across the entire study period, both during downturns and phases of recovery. Listing availability (V) also exhibits a strong association with the RFI, confirming its key role during periods of supply pressure, particularly in 2022 when the abrupt depletion of listings led to a substantial decline in the index. The weakest relationship is observed for financial stability (FS), which is characterised by greater stability and lower volatility. This result suggests that FS functions more as a stabilising rather than a determining factor, with its influence on the RFI becoming most visible during periods of recovery and expansion.

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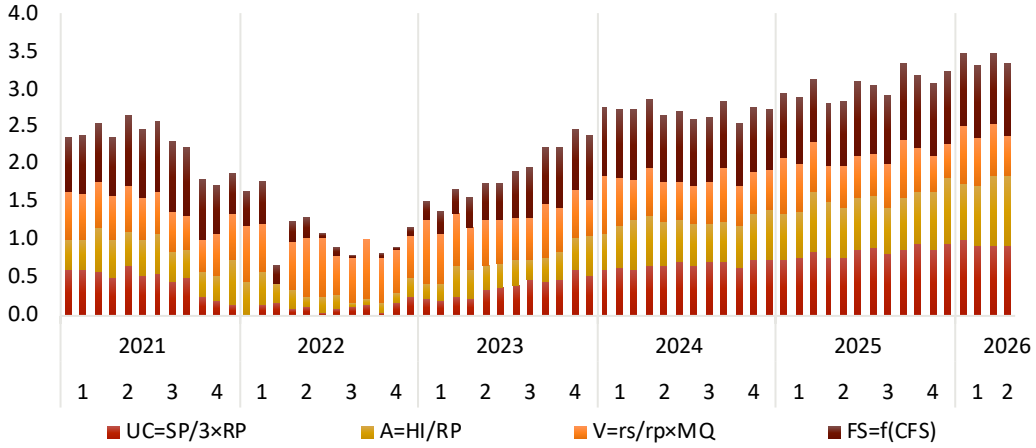


Fig. 2. Main components of the RFI, standardised cumulative values, total housing stock, Poland. *Source*: own study.

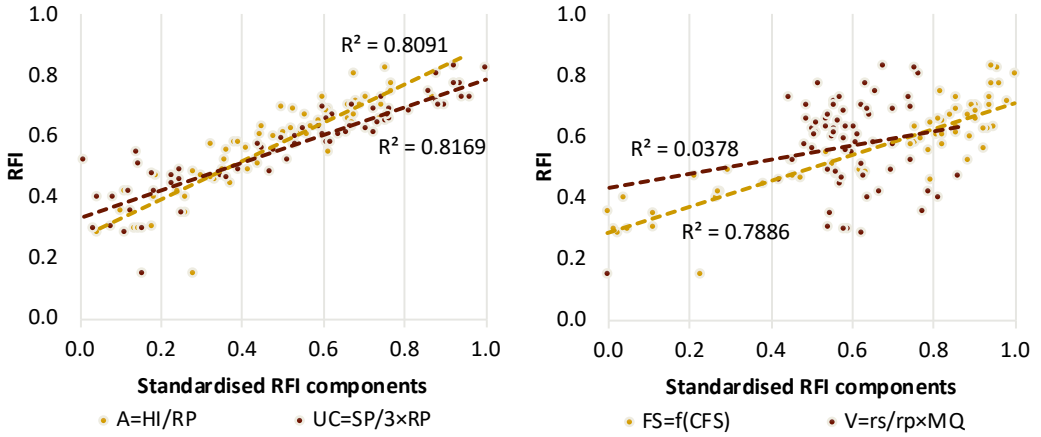


Fig. 3. Correlation between the RFI and its standardised components, total housing stock, Poland. *Source*: own study.

3.4. Comparison of RFI and HRAI

A comparison of the three-month moving averages of RFI and HRAI (Fig.4) shows that both indices follow a broadly similar long-term trajectory, although their dynamics differ markedly during periods of market stress. In 2022, the RFI responds with a sharp decline, falling to 0.26–0.37, whereas the HRAI changes in a much more moderate manner. This difference stems from the fact that HRAI is based solely on the income-to-rent relationship, while the RFI additionally incorporates listing availability, upfront costs and households' financial sentiment — all of which deteriorated significantly during that period.

In 2023–2024, HRAI recovers more quickly than RFI, reflecting an improvement in the income-to-rent ratio alongside persistent supply and sentiment constraints. During this period, the RFI increases gradually, reaching values of 0.41–0.66, while HRAI reacts more dynamically to the improvement in rental affordability. In 2025–2026, both indices rise, yet the RFI attains higher relative values — in 2026, RFI_AVG3M exceeds 0.80, indicating an improvement in rental conditions from a multidimensional perspective.

The correlation plot (Fig.4, right panel) confirms a moderate relationship between the two indices. This means that HRAI explains only part of the variation in RFI, while the remaining share reflects components not captured by HRAI, such as listing availability, upfront costs and households' financial sentiment. RFI therefore provides broader information on rental barriers, particularly during periods of pronounced market tension.

4. Discussion

The results of the analysis indicate that the proposed Rental Feasibility Index captures the multidimensional nature of rental feasibility in a way that traditional measures based solely on the income-to-rent relationship cannot. This is particularly evident during periods of market tension, such as the supply-demand shock of 2022, when RFI recorded a sharp decline while the Housing Rental Affordability Index responded only moderately. This difference stems from the construction of RFI, which incorporates not only rent affordability but also the availability of rental offers,

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upfront costs and households' financial stability. According to the rental market literature, these factors play an important role in shaping real rental feasibility, especially under conditions of constrained supply and heightened economic uncertainty.

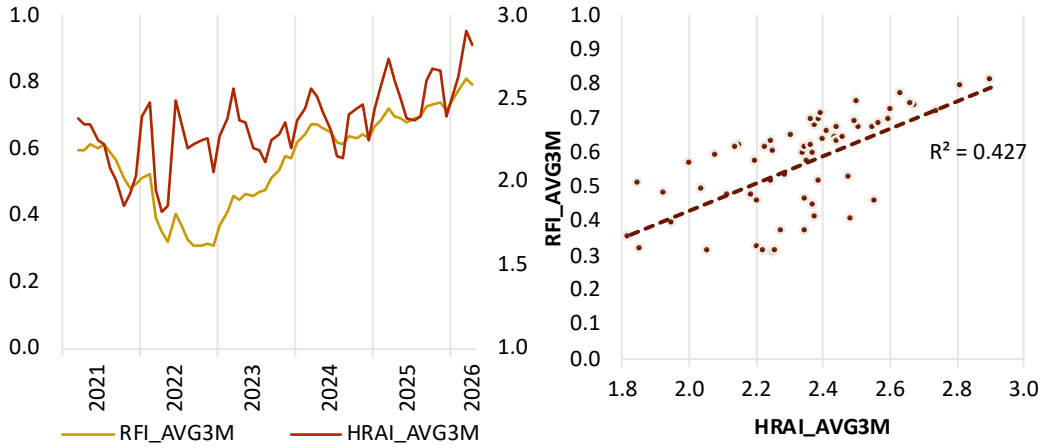


Fig. 4. Comparison of the dynamics of RFI and HRAI (3-month moving averages) in a time-series layout (left panel) and their correlation with linear estimation (right panel). *Source*: own study.

The current design of the RFI, based on linear aggregation (weighted summation), assumes mathematical substitutability between its components. This implies that, theoretically, a high sense of financial stability (FS) could offset supply shortages (V). However, given the specific nature of the real estate market—where supply barriers are critical—future research should consider employing the geometric mean as an aggregation method. Such an approach would eliminate the possibility of compensating for deficiencies in one key dimension with high values in another, thereby more accurately reflecting the actual transactional constraints within the rental market.

The analysis of RFI components shows that during the 2022 shock the key drivers were the availability of offers (V) and financial stability (FS), both of which deteriorated sharply. Affordability (A) also declined significantly, indicating the simultaneous influence of demand- and supply-side pressures. At the same time, upfront costs (UC) remained relatively stable, suggesting that in periods of severe market tension liquidity-related barriers such as deposits or transaction fees are less important than structural and behavioural factors. This finding is consistent with evidence from other European markets, where availability and sentiment tend to shape tenant and landlord behaviour during crisis periods.

In the following years (2023-2025), all components gradually recovered, with availability improving the fastest and affordability the slowest. This pattern reflects a process of market normalisation after the shock, but also persistent price pressures that may stem from rising housing maintenance costs and strong demand. By 2026, all components reached high levels, suggesting that the rental market had entered an expansion phase. It is worth noting, however, that the high RFI values may partly reflect improved financial stability, which - as shown by the correlation results - plays a stabilising rather than determining role.

The comparison between RFI and HRAI shows that the two indicators capture different aspects of the rental market. The moderate correlation ($R^2 = 0.427$) suggests that HRAI explains only part of the variability in RFI, confirming the need for multidimensional measures in the analysis of rental feasibility. The literature emphasises that traditional affordability indicators do not fully reflect the complexity of rental market processes, particularly in the context of rising economic uncertainty, demographic change and supply constraints. RFI addresses these challenges by integrating price-related, supply-side, behavioural and institutional factors.

It is also important to note that the interpretative benchmark used in this study, based on the median value of the base year 2021, is preliminary and requires further refinement. Future research should consider benchmarks derived from multi-year empirical distributions or statistical methods that allow for more objective threshold identification. The adoption of 2021 as an interpretive benchmark is a preliminary solution, carrying risks arising from the monetary and post-pandemic anomalies of that period. To ensure long-term econometric validity, future research should aim to identify market equilibrium thresholds using advanced algorithms, such as Markov regime-switching models. This would allow for an objective

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differentiation of market cycle phases and the determination of natural equilibrium levels for the Polish rental market without the necessity of an arbitrary base year selection. Similarly, regional or segment-specific analysis-although limited in this article-could provide valuable extensions, especially given the strong heterogeneity of rental markets in Poland.

Despite its broad analytical scope, this study has several limitations that should be considered when interpreting the results. First, the construction of RFI relies on monthly data, which, although suitable for analysing short-term dynamics, may not fully capture structural changes in the rental market. Second, the analysis was conducted at an aggregate national level, which limits the ability to identify regional differences that are particularly relevant in a highly polarised market environment.

Thirdly, the construction of the RFI in this study is based on weights determined empirically from reported rental barriers (NPS method), representing a significant advancement over the model's preliminary expert-based assumptions. This approach allowed for the direct capturing of the hierarchy of constraints from the end-user perspective and better alignment of the index with local market specificities (see Table 1). However, it should be noted that employing weights based on subjective respondent statements, while reflecting the actual perceptions of tenants, may introduce a degree of subjectivity bias from the standpoint of econometric rigor. To enhance the analytical objectivity of the measure, it is justified for future iterations of the RFI model to be validated using statistical dimensionality reduction methods. The application of Principal Component Analysis (PCA) or Factor Analysis (FA) would allow for the empirical determination of weights based solely on the variance each component contributes to the overall system, representing a natural progression in the index's evolution.

Finally, the financial stability component (FS) is based on perceptual data, which may not fully reflect households' actual perceptions of risk and stability. These limitations highlight the need for further research, including regional analyses, the testing of alternative benchmarks and the development of improved methods for measuring behavioural factors.

In summary, the results confirm that RFI can capture the complex processes occurring in the rental market. Its construction allows for the identification of both short-term shocks and long-term trends, as well as the analysis of the structure of rental barriers. Compared with traditional affordability measures, RFI provides more comprehensive information, making it a useful tool for both researchers and policymakers.

5. Conclusions

The results of the study show that the Rental Feasibility Index is particularly sensitive to market shocks, as demonstrated by the 2022 episode, when a sharp decline in the availability of rental offers and a deterioration in financial stability led to a substantial drop in the index. At the same time, RFI enables the identification of recovery and stabilisation processes, making it a useful tool for monitoring changes in rental market conditions in real time. The correlation analysis confirmed that rent affordability and upfront costs exert the strongest influence on the index, while availability plays a crucial role during periods of supply-side tension.

The comparison between RFI and HRAI indicates that although the two indicators are moderately correlated, they capture different aspects of the rental market. HRAI explains only part of the variability in RFI, which supports the need for a multidimensional approach to analysing rental feasibility. RFI can therefore serve as a valuable complement to existing analytical tools by providing more comprehensive information on the barriers and conditions shaping rental outcomes.

The findings also highlight the need for further development of the index, including the testing of alternative weighting schemes, refinement of interpretative benchmarks and the extension of the analysis to the regional level. Despite these limitations, RFI represents a promising analytical tool that can be applied both in academic research and in housing policy practice, supporting evidence-based decision-making.

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