

CHANGES IN DWELLING SIZE PREFERENCES IN THE POZNAŃ HOUSING MARKET

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Introduction: Local governments should see striving for a sustainable development of their towns, cities, municipalities and communes as a key policy objective. Achieving that objective requires that the needs and preferences of local communities are properly identified and recognised in various areas, including the housing market – a specific segment of the real estate market that is characterised by its locality and uniqueness, and which serves to accommodate the needs of households, both the basic ones (such as physiological needs, security or belonging) and those higher up the hierarchy (such as esteem or self-actualisation).

Aim of the paper: This paper presents data on dwelling size preferences in the local housing market in Poznań, showing that such preferences remained unchanged over 2010-2021. The paper identifies housing affordability as a potential limiting influence on such changes and a factor that may negatively affect the sustainable development of both the city and its population.

Materials and methods: The paper uses relevant aggregate data on the real estate market, including those found in publications from Statistics Poland (GUS) and the National Bank of Poland (NBP), and the results of research conducted by the Poznań University of Economics and Business, Department of Investment and Real Estate.

Results and conclusions: The results show that the local housing market saw no changes in dwelling size preferences over 2010-2021. On average, dwelling units bought are not big – they have two or three rooms and an area of around 50 sqm. This is caused by relatively low housing affordability in Poznań (too low incomes in relation to dwelling prices), giving rise to concerns regarding proper and sustainable development of local communities going forward.

Keywords: housing preferences, changes in housing preferences, local housing market, housing demand.

Introduction

Research into housing preferences is a part of a broader research into the housing market, and more specifically, its demand side. There is a view among those looking into housing preferences that this is needed because preference information is important and must be current, while the local market it comes from is changing rapidly. The importance of housing preference research is emphasised by Gawron (2012), among others. Gaining insight into what housing buyers find to be preferable is justified both theoretically and practically and those that should have an interest in the results of such studies include:

- property developers – as their task is to supply new dwellings meeting the expectations of their future occupants,
- urban planners and architects – as those with responsibility for designing residential estates and dwelling units (premises) to the highest possible satisfaction of their occupants,
- officials and decision-makers (whether at the central or local levels) – as those who set housing policy and make policy decisions, including how any housing needs will be accommodated, and as such are in need of good insight into housing preferences,
- banks – because in addition to providing housing loans (where knowledge of preferences is helpful in planning loan portfolios, for example in terms of how much can be loaned) banks also provide housing investment finance (here, knowledge of preferences is helpful in project evaluation and adjustment in line with market expectations).

It is generally accepted that adequate recognition of preferences supports rational decision-making across various areas and may be conducive to a sustainable regional development policy. On the connection between sustainability and the housing market, read, for example, in: Bryx (2021) or Strączkowski, Bartkowiak (2022).

The literature on the subject sees preferences as:

- a rating and prioritising system whereby certain goods can be ranked higher than others,
- the ability to prioritise certain products over others,
- the valuation of objectives when selecting goods,
- the inclinations when selecting goods,
- one of the three factors shaping a specific consumption plan (the other two being income and prices of goods or services), with the structure of preferences themselves affected by various factors, including age, family status, education, existential needs, and economic and social development (Szymańska, 2012, pp. 67-68).

There are numerous factors influencing buyers' preferences. According to A. Szymańska, they are both internal and external. The internal factors are associated with the psychological sphere because decisions we make can be affected by our current emotional state, mood, fear, or greed (Szyszka, 2009, pp. 67-71). The external factors derive from the consumer's immediate environment or surroundings. Here, we can distinguish demographic, economic, social, cultural and marketing factors. The latter group features some interesting factors relating to preferences induced by other people. These would be the so-called "bandwagon effect", which is when consumers mirror other market participants in their behaviour; internalisation, which is when individuals accept to be influenced by others, expecting greater benefits to themselves; recognition, which is when individuals accept to be influenced by others, expecting to maintain good relationships with them; or submission, which is when individuals accept to be influenced by others, thus avoiding punishment or, possibly, being rewarded (Szymańska, 2012, pp. 68-71).

In the housing market, preferences may also be affected by technological factors, such as novel construction techniques or how new dwellings look. The observable market trends, which change the behaviour of buyers, may also play a particularly important role in shaping their preferences. When given the opportunity to watch things, to test and become familiar with them, consumers can explore new housing ideas with greater acceptance and confidence. Discussions about preferences are also concerned with revealed and stated preferences. These are addressed by A. Bąk (2004, pp. 42-43), T.M. Wanat (2010, pp. 52-53), M. Głuszak (2006, p. 178), among others. They can be analysed once historical data (reflecting past consumer behaviour) have been gathered. Next to them, there are the so-called stated preferences. These are concerned with consumers' stated (or declared) market choices, that is, when consumers indicate their intended choice.

Recent years have seen a very dramatic change in the housing market and its surrounding areas. Apartment prices are in a state of flux and new products are introduced to meet population needs. Scholars address the subject of preferences in a variety of contexts. Following the outbreak of the COVID-19 pandemic, there have been studies recently on the impact of the pandemic on changes in housing preferences. One example is a study by Tjiputra and Sutrisno showing that the key preferences during the pandemic for households with young couples and small children were the type and design of house, security, and distance to shopping districts (Tjiputra, Sutrisno, 2022). Similar topics are addressed by Bottero, Bravi, Caprioli, Dell'Anna, Dell'Ovo and Oppio. They have examined the specific situation in Italy and concluded that the pandemic triggered changes in people showing the need for adaptation and changes to housing (Bottero, Bravi, Caprioli, Dell'Anna, Dell'Ovo i Oppio, 2021). Cuerdo-Vilches, Navas-Martín and Oteiza, who examined the Spanish market, have reached similar conclusions, pointing to the need for new housing solutions that would protect people in situations similar to the COVID-19 pandemic (Cuerdo-Vilches, Navas-Martín i Oteiza, 2019). Stankowska and Stankowska-Mazur, in turn, examined a number of economic factors and psychological

conditions relating to the third COVID-19 wave. In their study, they sought to establish the relationship between preferences for access to nature in one's place of residence before and during the third wave of the COVID-19 pandemic, and such variables as gender, age, background or how far one's residence was from natural or urban greens (Stankowska, Stankowska-Mazur, 2022). Nanda, Thanos, Valtonen, Xu and Zandieh, too, have joined the discussion on the impact of the pandemic on people's preferences, indicating the areas to be taken into account in any conclusions on the subject, such as the built area environment (development density, transport network, green spaces), key amenities for people's daily lives (educational, retail, recreational), socio-economic factors (household type, household income), or access to work (Nanda, Thanos, Valtonen, Xu, Zandieh, 2021). The pandemic and preferences were also addressed in a study by Bartkowiak and Strączkowski. While noting a difficult situation in the housing market during the pandemic, the authors are of the opinion that the pandemic have not changed the housing preferences significantly, albeit it revealed pre-existing problems to some occupants (Bartkowiak, Strączkowski, 2021).

It is not just the pandemic that can be examined in terms of choices or possible differences in preferences. Other such factors include: human life cycle and lifestyle (Palicki, 2020; Beamish, Carucci Goss, Emmel, 2015; Gawron 2012; McAuley, Nutty, 1982), income, work and potential buyers' education background (Hartono, Irawan, Khoirunurrofik, Partama, Mujahid, Setiadestriati, 2021; Opoku, Abdul-Muhmin, 2010), or modern technologies (van Rijnsoever, Farla, 2014; Górska, Mazurczak, Strączkowski, 2021).

Studies on changes in preferences over time are relatively harder to come by. The likely reason is that any conclusions here would require systematic years-long research. That said, it seems that some conclusions might be drawn based on research from the U.S.-based National Association of Realtors (NAR) or the National Association of Home Builders (NAHB). Each year, the NRA tries to issue a report addressing a number of subjects, including buyers and their profiles, buying choices, housing search process, financing, or sales experience. The NAR carries out its research via (paper-form and web-based) surveys including approximately 130 questions and addressed to random samples of house buyers. The results are presented for the USA as a whole and separately for its north-east, central-west, south and west areas (NAR, 2018, p. 142). Importantly, the NAR focuses its research on actual customer choices – as such, therefore, these are their revealed preferences. In turn, the NAHB website offers a selection of interesting studies on customer behaviour in the U.S. market. Notably, the results of NAHB's 2003-2018 research point to a change in buying preferences (for homes and their furnishing) over the 15 years covered (Brady, 2018).

Regarding preference research in Poland, a dozen or so individual studies have been conducted. Their summary can be found in Strączkowski's paper (2021, pp. 71-82). However, they were all one-off efforts, differing in terms of subject-matter and research timeframes. Most importantly, though, they all had mainly local housing markets as their focus, which relates to how the property market operates. Now, referring to changes in preferences over time,

one can quote Kulesza and her view that “housing preferences change very slowly, seeing as they are overwhelmingly influenced by the force of inertia, habit and custom” (Kulesza, 1996, p. 51).

Investigating changes in preferences in the local housing market. Methodological assumptions

Our research into changes in preferences in the local housing market had the following objectives:

C1: To identify preferences in the local Poznań market as they were in 2019;

C2: To present changes in preferences regarding the size of dwellings (area and number of rooms);

C3: To identify the price barrier inhibiting changes in preferences relating to housing size.

To achieve this, a decision was made to collect data from various sources. These included research findings from studies done by Poznań University of Economics and Business, Department of Investment and Real Estate, and information published by Statistics Poland and the National Bank of Poland. The methodological assumptions behind this work are presented in Table 1.

Table 1.

Study of changes in preferences in the local housing market: basic information

Item	Description
Research timeframe and data sources	<ul style="list-style-type: none"> • Stated preference studies for 2011, 2012, 2018, 2019 • Housing transactions in the primary market, data from the National Bank of Poland for 2015-2021 • Housing transactions on the market generally, data from Statistics Poland for 2010-2021 • Dwelling unit completions by developers, data from Statistics Poland for 2010-2021
Spatial scope	<p>Local rental market for residential properties in Poznań. This is a local housing market. Each such market is different, as demonstrated by numerous domestic and foreign studies in this field (m.in.: Schmitz and Brett, 2001, pp. 3-18; Stefaniak, 1997, p. 33; Kucharska-Stasiak, 2016, p. 59; Belniak, Wierzchowski, 2001, p. 42, Górska, Mazurczak, Strączkowski, 2021, pp. 38-43).</p> <p>The changes that took place in the local housing market during the period under review are described in, among other places: (Matusiak, Palicki, Strączkowski, 2017), (Gawron, Strączkowski, 2018), (Strączkowski, Koszel, 2021), (Strączkowski, Bartkowiak, 2022).</p>
Material scope	<ul style="list-style-type: none"> • Buyers' preferences in the local housing market • Changes in buyers' preferences regarding housing size (area and number of rooms) • Average sizes of dwellings sold in the primary market • Average sizes of dwellings sold in the market generally (primary and secondary markets together) • Average sizes of dwellings completed by property developers • Average numbers of rooms in dwellings completed by property developers • Housing affordability for dwellings in primary and secondary markets

Source: Own compilation.

Housing buyers' preferences: Poznań, 2019

The most recent study of preferences covering the local housing market in Poznań is from 2019. Information was then gathered from a non-random purposive sample of potential housing buyers in a direct questionnaire-based survey. The respondents were visitors to housing fairs (mostly showcasing properties offered by developers) who made clear their buying intention and were actively searching for housing. Research material was obtained from $n = 276$ respondents who stated their preferences regarding the dwelling, building and location parameters.

The respondents (potential homebuyers) might be broadly characterised as follows:

- Most were young people: the under-30s made up more than half of those surveyed (53%), followed up by 32% of those in the next age bracket, 31 to 40, and 15% of older respondents.
- Women were more likely to respond: 60% of respondents were women and 40% – men (women were more willing to complete the questionnaires).
- Most respondents had families: those with families made up 78% of total respondents.
- Most were childless: 20% of respondents said they had one child, 16% – two children, and 4% – three or more children.

Table 2.

Preferred options for dwellings, buildings and surroundings

Preferred option	As %
Balcony/terrace	95
Housing estate with retail facilities	74
Lift in the building	73
Playgrounds and leisure facilities on the estate	71
Low-rise building – no more than 4 storeys	63
Estate cheaper but away from the city centre	58
Space for prams and/or bicycles	45
Bathroom with a toilet	44
Walled community	44
Small common areas to be kept	37

Note: The table only includes those preference items for which there were more responses stating that respondents found any given item to be important than those in which respondents found it to be unimportant or were indifferent about it. Accordingly, the percentages in the table are for responses in which the respondents indicated that the element was important to them. For a broader discussion of these results, see: Strączkowski, 2021, pp. 164-167.

Source: own compilation.

If we consider the respondents' main preferences regarding dwellings, buildings and surroundings, these would be: having a balcony (95% of respondents), living on a housing estate with retail and service facilities (74%), and having a building with a lift (73%). Pricing preferences for housing are notable too: 58% of the respondents said they would choose unit on a housing estate that was cheaper but located further away from the city centre (Table 2). The price can therefore be assumed to be a key factor in their choice.

Completing the picture of housing preferences are the respondents' answers regarding dwelling sizes and the number of rooms. A summary of their responses is shown in Figure 1a and 1b.

As shown, regarding dwelling sizes, the preferred option with most respondents was for units with an area between 36 and 50 sqm (45% of all respondents). The second largest group of respondents showed preference for units with an area between 51 and 65 sqm (29%). This is somewhat reflected in the number of rooms, with 25% of all respondents choosing two-room dwellings, 40% – three-room ones, and 30% – four-room or larger units. Of course, the differences between percentage figures for dwelling sizes and room numbers vary, reflecting different architectural concepts. For instance, market listings for 50 sqm dwellings can be for either two- or three-room units.

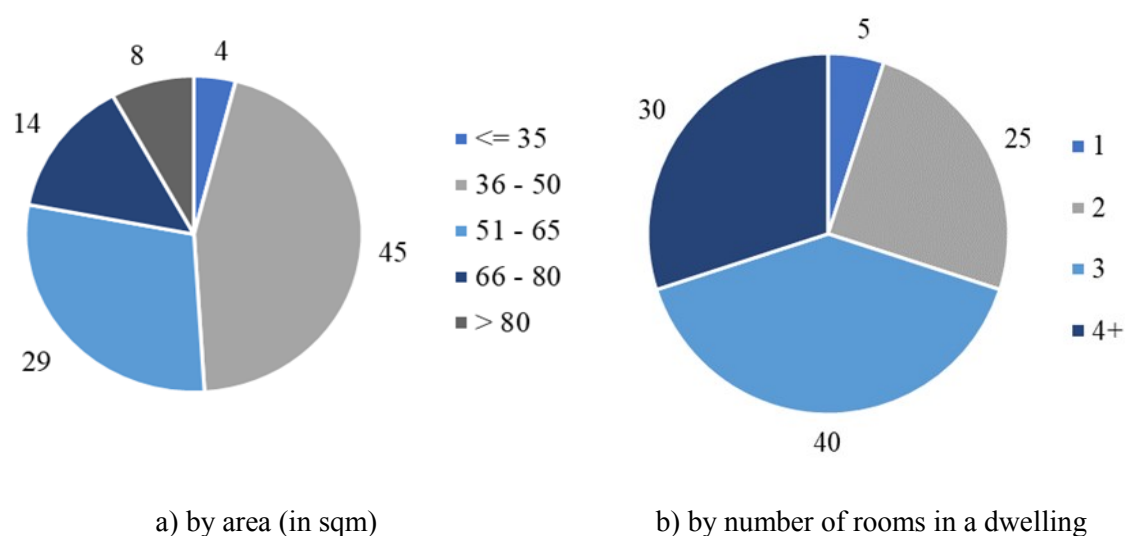


Figure 1. Preferred dwelling size, Poznań housing market, 2019.

Source: own compilation.

This begs the question of what main conclusion should be drawn from these findings. Here is what is notable:

- 1) More than half of the respondents showed interest in cheaper housing outside the city centre. One can assume, therefore, that prices are an important guiding factor in their decisions and that they are willing to accept less attractive housing locations for a lower price.
- 2) In terms of size, the preference structure shows that nearly $\frac{3}{4}$ of the respondents are interested in units between 36 and 65 sqm in size. That is reflected in the average preferred area, which was 56.5 sqm.
- 3) In terms of rooms, looking at Figure 1b and bearing in mind the qualitative nature of this parameter, one can assume that, on average, three-room units are among the most sought-after dwellings.

An inference one could venture at this point, therefore, is that the preferred dwellings are not large at all. Another question worth exploring is whether there have been any changes in dwelling size preferences over, say, a ten-year period. An attempt to answer this question is presented later in the paper.

Housing size preferences in Poznań: a dynamic approach

The first source that could help in answering the question of whether there was any variability in preferences over time is the research into stated preferences which the Poznań University of Economics and Business, Department of Investment and Real Estate, carried out in 2011-2019. Due to organisational and time constraints these studies were not conducted every year but only in 2011, 2012, 2018, and 2019. Their detailed description, including the results, can be found in Ł. Strączkowskiego (2021).

The following metrics were adopted to identify changes in preferences:

- 1) the *mean preferred housing size* among potential buyers. This size was determined based on all responses from the respondents regarding the size of dwelling they were looking for;
- 2) the *average preferred number of rooms*. Bearing in mind the qualitative character of this parameter, statistical studies with information on the average number of rooms per dwelling were considered.

In general terms, the research conducted in 2011-2019 has found that:

- 1) In 2011, the preferred dwelling area was 57.0 sqm on average. In 2012, it was 56.1 sqm, in 2018 – 54.8 sqm, and in 2019 – 56.5 sqm. This means that, in terms of preferred housing area, there has been little change, arguably from 55 to 57 sqm. By and large, therefore, one could generalise that the decade in question saw no change in preferences.
- 2) In 2011, the preferred number of rooms was 2.5 on average. In 2012, it was 2.6, in 2018 – 3.3; and in 2019 – 3.1. This means that the changes in this metric were also small, with a growth here at half a room, so to speak. Generally, three-room dwellings were the preferred option.

Accordingly, the stated preference studies do not corroborate any changes in preferred housing sizes.

Information collected and published by the National Bank of Poland provides the other source of data for determining whether the Poznań market has seen any changes in dwelling size preferences. Here, the underlying data-handling operations and assumptions were as follows:

- 1) Data obtained from the National Bank of Poland were available as quarterly datasets for 2015-2021. For this study, they have been aggregated and presented on an annual basis. There were no data for earlier periods on the NBP's website that would match the periods for which the stated preference studies were carried out.
- 2) The average dwelling size was estimated by reference to data on primary market housing sales. It was assumed that this metric will be comparable to the one obtained from the stated preference study and that an attempt could be made on its basis to illustrate market changes (if any).
- 3) The published NBP data do not include information on sales by number of rooms. Therefore, this parameter was omitted from the analysis.
- 4) Housing sales on the primary market in Poznań are shown in Figure 2. In each year under examination the biggest sales were in the 40-60 sqm housing segment. The last two years in that period saw the sales figures for that segment decreasing, with the 60-80 sqm housing segment slightly gaining in significance.

As shown, then, in terms of size, the following dwellings were purchased on average: in 2015 – 50.1 sqm; in 2016 – 49.7 sqm; in 2017 – 50.0 sqm; in 2018 – 51.0 sqm; in 2019 – 50.0 sqm; in 2020 – 50.8 sqm; and in 2021 – 52.7 sqm. This means that, in terms of size, there has been little change in purchased dwellings, from 50 to 53 sqm. By and large, therefore, one could generalise that the seven years in question saw no change in that metric. Obviously, while there are slight differences here compared to data from stated preference studies, it must be remembered that what buyers declare may differ from they ultimately decide (due to financial constraints, how attractive properties they are offered are, etc.).

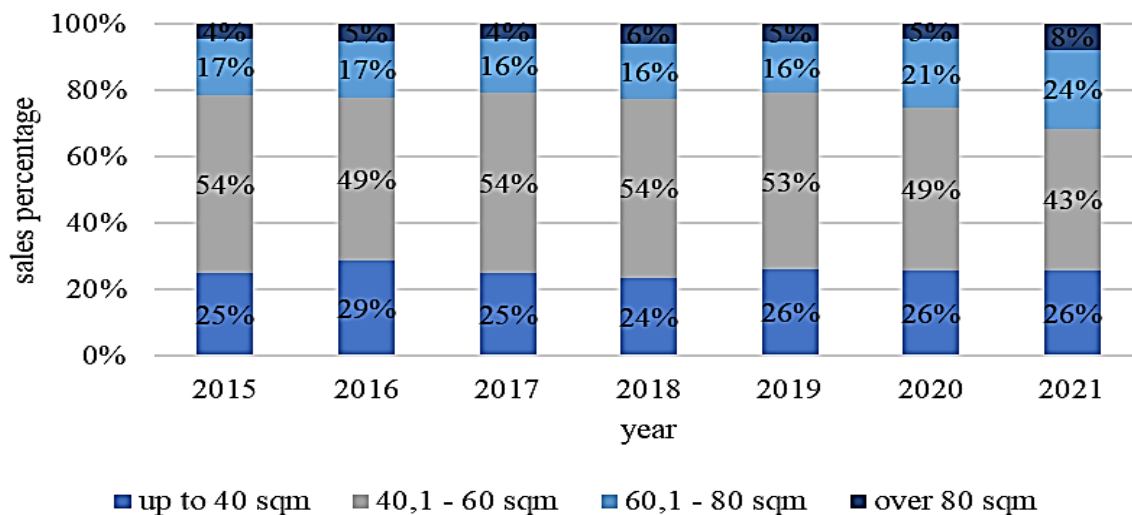


Figure 2. Housing sales on the primary market in Poznań, 2015-2021.

Source: own compilation based on data from the National Bank of Poland.

A third source to rely on in verifying if there have been any changes is provided by data from Statistics Poland on total housing sales in Poznań (primary and secondary markets together). Here, the underlying data-handling operations and assumptions were as follows:

- 1) The data from Statistics Poland are available as annual datasets for 2010-2021 and record housing transactions in the Poznań market. Those data can be compared with those from the National Bank of Poland and stated preference studies.
- 2) The average size of purchased housing was estimated by reference to data on market sales. It was assumed that this metric will be comparable to the one obtained from the stated preference studies and that an attempt could be made on its basis to illustrate market changes (if any).
- 3) As with data from the National Bank of Poland, the number-of-rooms parameter was omitted from the analysis.
- 4) Housing sales on the Poznań market are shown in Figure 3. As before, the biggest sales in each year under examination were in the 40-60 sqm housing segment. The last two years in that period saw diminishing sales figures for the largest and smallest dwellings, with the 60-80 sqm housing segment slightly gaining in significance.

As shown, then, in terms of size, the following dwellings were purchased on average: in 2010 – 53.0 sqm; in 2011 – 52.9 sqm; in 2012 – 52.4 sqm; in 2013 – 52.0 sqm; in 2014 – 51.7 sqm; in 2015 – 51.0 sqm; in 2016 – 51,5 sqm; in 2017 – 51,6 sqm; in 2018 – 52,0 sqm; in 2019 – 51,1 sqm; in 2020 – 51,7 sqm; and in 2021 – 52,1 sqm. This means that, in terms of size, there has been little change in purchased dwellings, from 51 to 53 sqm. By and large, therefore, one could generalise that the decade in question saw no change in that metric. Also, there are slight differences between these figures and data from stated preference studies.

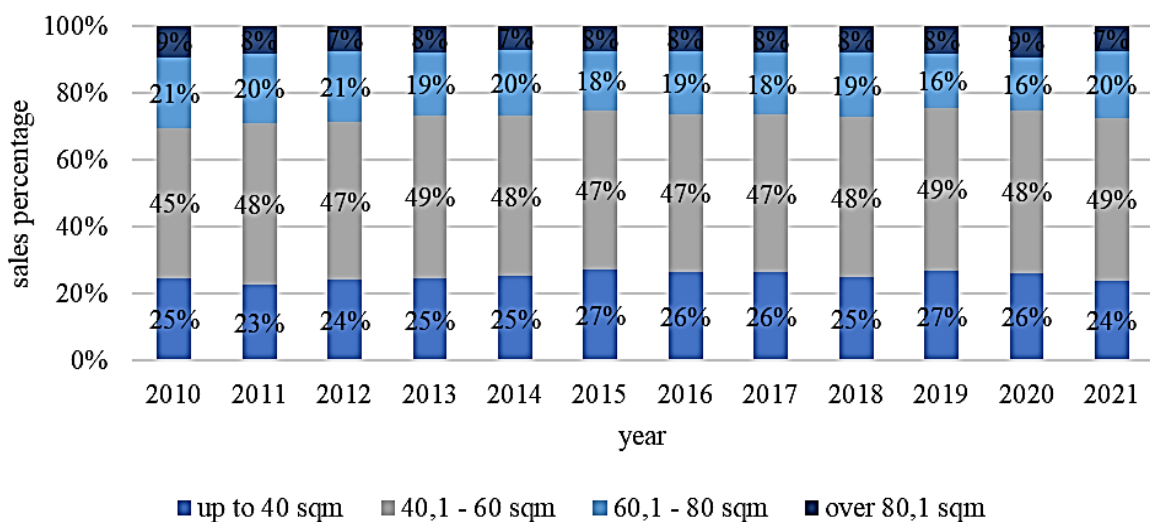


Figure 3. Sales of flats in Poznań in 2010-2021.

Source: own compilation based on data from Statistics Poland.

A fourth data source to corroborate any local-market changes in preferences is found on the supply side. These are the Statistics Poland data on sizes of completed dwellings from property developers. The underlying reason why these data are analysed is the belief that developers are rational in what they do: if they want to operate in the market, they should plan and construct the kind of housing that sells best in that market. Accordingly:

- 1) Data was obtained on the number of dwellings completed by developers in Poznań, included their sizes and the number of enclosed spaces (*izby*) within a dwelling. While enclosed spaces are not the same as rooms (*pokoje*), the metric was considered suitable to illustrate certain trends.
- 2) Based on those data, the average size of constructed dwellings was estimated. It was assumed that this metric will be comparable to the one obtained from stated preference studies and to those derived from the NBP and Statistics Poland data. Based on this metric, an attempt could be made on its basis to illustrate market changes (if any).
- 3) Since no data could be obtained to illustrate the structure of completed dwellings with, the final results are shown in Table 3.

Table 3.*Preferred options for dwellings, buildings and surroundings*

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Dwelling units from property developers as a share of total dwelling completions (as %)	84	84	81	79	91	88	87	91	88	83	91	88
Average number of enclosed spaces in a dwelling unit from a property developer	2,8	2,8	2,7	2,5	2,7	2,5	2,7	2,6	2,7	2,8	2,5	2,7
Average area of a dwelling unit from a property developer (in sqm)	57,4	57,7	56,9	56,5	54,8	53,7	54,1	53,3	55,1	54,3	54,9	56,0

Source: own compilation based on data from Statistics Poland.

In terms of size, completed dwelling units from property developers averaged between 53 and 57 sqm over 2010-2021. This means that there has been little change on average in how large the purchased dwellings are. In fact, as a generalisation, the decade under consideration saw no change in that metric. Also, there are slight differences here compared to data from stated preference studies. The same is true regarding the average number of enclosed spaces in dwelling units from property developers, which ranged between 2.5 and 2.8.

Based on the results of calculations for 2010-2021, there has been no change in preferences, as is clear from both stated preference studies and the published data from the National Bank of Poland and Statistics Poland (Table 4).

Table 4.*Dwelling units in Poznań: average, minimum and maximum sizes, 2010-2021*

Item	Minimum	Maximum	Average	Difference between minimum and maximum
Preferred dwelling size in sqm (as declared, based on Department of Investment and Real Estate research)	54.8	57.0	56.1	2.2
Average dwelling size for housing purchased in Poznań primary market, in sqm (NBP data)	49.7	52.7	50.6	3.0
Average dwelling size for housing purchased in Poznań market generally, in sqm (Statistics Poland data)	51.0	53.0	51.9	1.9
Average dwelling size for units from property developers, in sqm (Statistics Poland data)	53.3	57.7	55.4	4.4
Preferred number of rooms in a dwelling (as declared, based on Department of Investment and Real Estate research)	2.5	3.3	2.9	0.7
Average number of enclosed spaces in dwelling units from property developers (Statistics Poland data)	2.5	2.8	2.7	0.4

Source: own compilation based on data from Statistics Poland and the National Bank of Poland and own research findings from Poznań University of Economics and Business, Department of Investment and Real Estate.

Regarding dwelling sizes, all four data sources indicate that, in square metre terms, there was little difference in the years under consideration, between 2 and 4 sqm. No particular upward or downward trends have been observed in this respect. The same is true of the number of enclosed spaces in a dwelling: the difference here is small as well. On that basis, it would be warranted to claim that units with an area of 50-57 sqm continue to attract the greatest interest. Regarding the number of rooms, units with two or three rooms continue to enjoy the greatest popularity, as has always been the case. One other conclusion is about stated preference studies: based on the comparison of results, it can be said that they provide a pretty accurate picture of what is happening in the market.

Another question that is worth asking, however, is about limitations on changes in housing size preferences. It would seem natural to want to expand one's living space, which in this context means having a bigger dwelling in square metre terms. As it is, however, basically nothing has changed in this regard in a decade. In searching for answers, it is only natural to look at housing prices and how much people in the local market earn. On that basis, one can determine the so-called "housing affordability indices". These can then be used to find out how expensive the housing on the market is in relative terms. The relevant data here are summarised in Table 5.

Table 5.*Housing availability, primary and secondary Poznań markets, 2010-2021*

Year	Average gross pay in the enterprise sector, (in PLN)	Transaction price per sqm, primary market (in PLN)	Housing availability, primary market* (score)	Transaction price per sqm, secondary market (in PLN)	Housing availability, secondary market* (score)
2010	3485,96	6 591	5,47	5 246	4,35
2011	4031,58	6 219	4,46	5 254	3,77
2012	4148,48	5 339	3,72	5 067	3,53
2013	4274,17	5 868	3,97	5 062	3,43
2014	4422,26	6 225	4,07	5 010	3,28
2015	4524,74	6 234	3,99	5 060	3,24
2016	4729,60	6 304	3,86	5 282	3,23
2017	5054,27	6 382	3,65	5 550	3,18
2018	5405,94	7 017	3,76	6 114	3,27
2019	5742,55	7 396	3,73	6 664	3,36
2020	5998,09	7 636	3,68	7 205	3,48
2021	6468,86	8 597	3,85	7 675	3,43

* This indicator is shown for a 50 sqm dwelling as a typical unit in development projects and for a two-person household's average annual net income (actual income received). This is the so-called P/I ratio which factors in housing prices and household's annual income. The score of up to 3 points reflects housing affordability for households; the score of 3.1-4.0 reflects moderate unaffordability; the score of 4.1-5.0 reflects unaffordability; and the score of more than 5 points means high unaffordability (for more on the ratio, see Mazurczak, Strączkowski, 2014, p. 107).

Source: own compilation based on data from Statistics Poland and the National Bank of Poland.

As can be seen, housing was relatively expensive in each year (2010-2021), both in the primary and secondary markets. The housing affordability indices for the primary market reveal a permanent moderate unavailability; in some periods this unavailability was exacerbated (2010, 2011, 2014). The situation looked a little better in the secondary market, even though better in this case only means that the indices were *relatively* better for buyers than in the primary market, but still revealed moderate housing unavailability. It would seem that the price factor is the primary barrier inhibiting housing size preferences. Even where buyers would want to buy a larger dwelling, property acquisition costs and constraints relating to interest rates and availability of home loans stand in their way. This, in turn, might mean that any changes in preferences would be with regard to interior design and colours, but not the "hard" parameters for housing, such as its size or how many rooms it has.

Summary

Based on this information, it can be said that customer preferences have not changed significantly over a dozen or so years. It seems that this is too short a timeframe for any far-reaching changes to take place. Generally, there has been no change in basic dwelling parameters. Units which continue to enjoy the greatest popularity are two- and three-room flats

in low-rise buildings, with an area of 36-50 and 51-65 sqm. There have been some changes regarding dwelling arrangements (such as the need for a balcony or terrace or diminished importance of a separate kitchen), deriving from greater acceptance of certain solutions and new furnishing styles. These subdued changes in preferences are not caused by buyers having less cash, either. It would seem, therefore, that households need more time to accumulate relevant housing experience, learn that each dwelling is a capital asset or that dwellings can be sold and bought more frequently, and that they do not need to live in one place for decades. These issues should be used as the basis for further research.

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