FIX AND FLIP PROPERTY FLIPPING

An analysis on 2021 fix and flip property flipping in the Netherlands

Colophon

Bachelor Thesis	Human Geography and Planning
Title	Fix and Flip Property Flipping
Subtitle	An analysis on 2021 fix and flip property flipping in the Netherlands
Location	Groningen
Date	17-06-2022
Version	Final version

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Number of pages	34
Word count	6488
Illustration front page	FundaMakeovers (2021)

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Abstract

Fix and flip property flipping entails buying poor conditioned and badly maintained residential properties for a low price, to renovate them and sell them again in a short period of time. In this study, the best spatial location for fix and flip property flipping is visualized using GIS maps. The area around Limburg, S'hertogenbosch and Zeeland is found to be the most profitable. Furthermore, the key characteristics of fix and flip properties found in this study are that these properties are older, cheaper and smaller than the average house. Finally, a multiple linear regression showed that time between sale and offering and property area size are the best predictors for a profitable fix and flip. This study does not account for renovation costs.

1. Introduction

Since the beginning of mankind shelters are constructed to create a safe environment to live in, giving protection against external threats such as animals, climate, and robbers (Nelson, 2013). It is crucial that a house ensures privacy and individuality to properly develop the basic skills and abilities in life (Opdyke et al., 2021). Therefore, adequate housing was recognized as part of the right to an adequate standard of living in article 25 of the 1948 Universal Declaration of Human Rights (United Nations, 2022). However, over the years housing and real estate markets worldwide transformed more towards a vehicle for wealth and investment (United Nations, 2022). This is known as the financialization of housing.

In this paper property flipping as an investment form in the residential real estate market will be thoroughly analyzed. The definition of property flipping can be described as purchasing a house with the intent of quickly reselling the house at a higher price (Depken et al., 2009). This can be achieved according to different methods. The easiest method is the purchase of a house below its market value and then selling it in a short period of time at its right market value (Anacker et al., 2015). This is the least labor-intensive way of property flipping and can be achieved due to forced circumstances of the seller such as relocation, divorce or pending foreclosure (Depken et al., 2009). In this research paper, this method of property flipping will not be considered.

The other form of property flipping is the so-called fix and flip method (Depken et al., 2009). This entails buying poor conditioned and badly maintained residential properties for a low price, to renovate them and sell them again in a short period of time (Depken et al., 2009). This is a labor-intensive way of property flipping which comes with great risks. In this research paper only this fix and flip method of property flipping in the residential real estate market will be thoroughly analyzed. This study does not contain any information about renovation costs regarding the ‘fix’ in fix and flip property flipping as will be explained in the methodology.

To date, there has been little written about fix and flip property flipping in the Netherlands. Most literature on property flipping is based on American cities (Bayer et al., 2011). Only the statistical analysis approach and the description of definitions is used from these American

sources for this study since property flipping is strongly country dependent. This is because of local regulations and a different shaped residential market (Bayer et al., 2011). Therefore, it is crucial to understand the current regulations and the residential market to be able to draw proper conclusions on property flipping in the Netherlands. However, the literature that has been written about property flipping in the Netherlands, is about property flipping in general so both methods of flipping as aforementioned combined (Brainbay, 2022). These methods are very different (Depken et al., 2009), therefore it adds value to analyze them both separately. The risk, labor-intensity, profits, and characteristics of the properties for both methods are completely different (Bayer et al., 2011).
Also, in none of the literature attention is paid to the regulations regarding flipping and neither are there any geographical visualizations of profit-wise the best location to conduct a fix and flip.

To close this research gap the following main research question is proposed:

What are the best predictors for a profitable fix and flip in the Netherlands in 2021?

The following sub questions should help answer this main research question.

1. What is profit-wise the best spatial location for a fix and flip property flip in the Netherlands?
2. What characteristics have fix and flip properties in the Netherlands?
3. What regulations apply to fix and flip properties in the Netherlands?

This research is of great societal relevance since fix and flip property flipping impacts the residential real estate market (Bayer et al., 2011). Everyone is connected to this market since a shelter is needed and the government is responsible to facilitate this in the Netherlands (De Nederlandse Grondwet, 2018). Therefore, it is important to monitor this investment strategy and its effect on the residential market, especially now. The current house prices are extremely high and are still rising (CBS, 2022). Affordable housing for starters or low-income categories is not available (Kadaster, 2021). The effects of fix and flip property flipping might make this situation worse since the aim is to raise the price of properties (English, 2005) (Leung et al., 2011). Therefore, this research is of great relevance especially since the data of this study is very recent and therefore currently particularly useful. Based on

these outcomes a better substantiated approach on fix and flip investors regarding the housing crisis might be reached.

The structure of this research paper will be as follows. First, the relevant theory and concepts regarding fix and flip property flipping will be discussed, supported by relevant literature. This will result in a theoretical framework that helps to understand the research topic. A hypothesis will end this part. Thereafter the choice of the research method is justified combined with an explanation of how the data is collected. Next, the results are presented and compared with the theoretical framework. Finally, the conclusion is drawn with a reflection on the research process.

2. Theoretical Framework

2.1 Effect on house sale prices

Let us start by examining the effect of property flipping on house sale prices. Timing is of great importance for property flippers. Flippers believe there will be an increase in future value of the property, but this comes with risks since the appreciation might come later than expected (Anacker et al., 2015). However, there is a positive relationship between the amount of risk and the investment returns (Anacker et al., 2015). According to Allen et al. (2015) flippers should complete their flips as quickly as possible to maximize their investment returns. The main determinant for profit is speed even more than characteristics mainly due to taxation regulations that will be explained below (Allen et al. 2015). Shiller (2009) states that rapidly increasing house prices stimulates flipping which increases house prices even further. Depken et al. (2009) analyzed the rate of return during the U.S. housing bubble resulting in an annual rate of return exceeding 60%. However, even after adjusting for opportunity cost such as transaction costs, cost of renovating the property and realtor's fees still an annual rate of return of 20% was achieved (Depken et al., 2009).

Table 1 describes the property flipping situation in the Netherlands. In 2021 a 36% annual rate of return was achieved on flipping properties which is adjusted for the average price increase in the market but not adjusted for other opportunity cost. (BrainBay, 2022). Without adjusting for any opportunity costs a 54% annual rate of return was achieved.

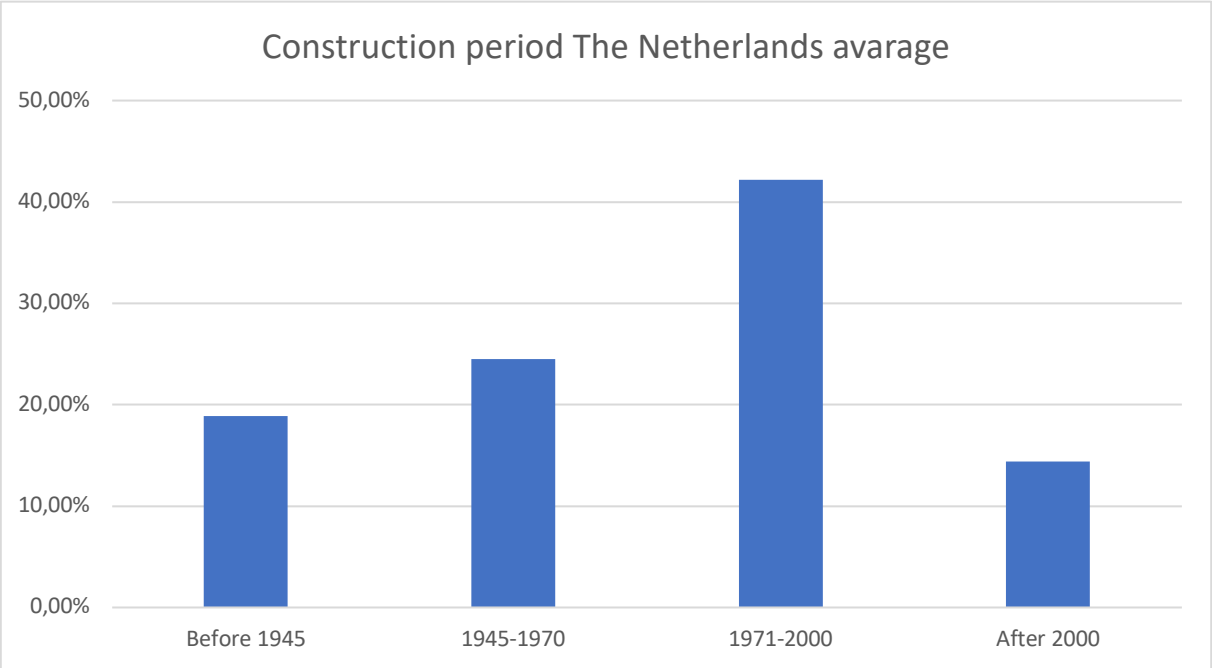
Transaction price 1st selling	**Transaction price 1st selling after market price correction**	**Transaction price 2nd selling**	**Transaction price difference before market correction**	**Transaction price difference % before market correction**	**Transaction price difference after market correction**	**Transaction price difference % after market correction**
291.000	331.000	442.000	151.000	54%	111.000	36%

*Table 1: Transaction prices of flipped properties in 2021, The Netherlands (*BrainBay 2022).

2.2 Characteristics

Flip houses tend to have some typical characteristics. According to Allen et al. (2015) older houses are more suitable for a flip since they appreciate faster than newer houses. The data of Depken et al. (2009) is in line with this: 'Flippers dig deeper into the existing housing stock

and purchase older homes for resale'. The median age of homes being flipped is getting older in the U.S. and this was on average 37 years old in 2016 (ATTOM, 2021). This can be explained from the fact that older homes or fixer-uppers can benefit from substantial renovations before being re-sold, more than recently built homes. (Bayer et al., 2011).
The average age of houses in the Netherlands is divided into construction periods as visualized in graph 1 (WoonOnderzoek Nederland(WoON), 2019)).



Graph 1: Construction period of all houses in percentage in the Netherlands (WoonOnderzoek Nederland(WoON), 2019)).

Furthermore, flip houses are smaller than average non-flip houses (Depken et al. 2009). Out of an investment return rate perspective it is often most optimal to buy the smallest, oldest, and least maintained house in the neighborhood for a proper flip (Allen et al. 2015). According to BrainBay (2022) the average size of a flip property is 105 m^2 in the Netherlands and after the renovation or 'fix' 6m^2 is added on average. For comparison, the average house has 120m^2 in the Netherlands (CBS, 2013).

The number of rooms has a positive influence on the appreciation rate of a flipped property (Allen et al., 2015). Also, the data shows that on average 1.5 rooms are added after a renovation of a flipped property in the Netherlands (BrainBay, 2022).

Flipping properties in the lower value stratum are associated with an increased investment return (Allen et al., 2015). Likewise, properties that are priced well-below their market value are interesting for flipping (Bayer et al., 2011). According to BrainBay (2022) properties are bought on average for 291.000 euros before they are flipped. This is far below the average house price of 387.000 euros in 2021 (CBS, 2022).

2.3 Spatial location

Anacker et al. (2015) analyzed the effects of location on potential property flipping transactions. Cold real estate markets characterized by low transaction volume and declining or stagnant property values were compared to hot real estate markets characterized by relatively high demand for real estate due to population growth, high property values, high property value appreciation rates and high turnovers. The results indicated that most property flipping takes place in hot real estate markets. Bayer et al. (2011) confirms this, as flippers buy at locations were expected market appreciation is high. This is exactly what happened in practice just before the U.S. housing bubble. Rapidly escalating prices influenced property flippers to speculate on residential property because market appreciation was extremely high (Depken et al., 2011). This could be because of housing shortage, fast population growth or easy credit options for potential home buyers (Wheaton et al., 2008).

According to Allen et al. (2015) houses located in central city areas appreciate slower than houses located in suburban areas. Likewise houses located in a local historical neighborhood also have a significant positive relationship with house price appreciation rates. (Allen et al. 2015)

The number of properties that were fixed and flipped according to BrainBay (2022) was at most 600 in the Netherlands in 2021. Most were flipped in the 4 biggest cities of the Netherlands. The distribution of flipped properties per location also indicates that flipping takes place in hot real estate markets (table 2).

Location	Percentage of flipped properties in 2021
Den Haag	10.3%
Amsterdam	4.9%
Rotterdam	3.8%
Utrecht	3,6%
Haarlem	3.4%
Amstelveen	2.4%
Breda	2.4%
Almere	2.3%
Hilversum	2.3%
Voorburg	2.1%
Eindhoven	2.1%

Table 2: Distribution of flipped properties per location in 2021, the Netherlands (BrainBay,2022)

2.4 Regulations

The most important regulation applicable to both forms of property flipping in the Netherlands is the exemption from transfer tax. This regulation is crucial to understand since it heavily influences the profits made by property flipping. A new law ('Wet differentiatie Overdrachtsbelasting) entered into force that raised the general transfer tax from 2% to 8% and decreased the transfer tax for starters to 0% (Ministerie van Financiën, 2020). The general transfer tax applies to real estate transactions where the buyer will not be living himself such as holiday homes or second homes (Belastingdienst, 2022). Therefore, this general transfer tax tariff of 8% applies to fix and flip properties as well.

The transfer tax increase has been implemented to increase the accessibility for starters into the residential real estate market and to decrease the influences of private investors (Van den Berg, 2020). Due to the shortage on the residential real estate market starters are not able to purchase a home because they are continuously outbid by private investors. Private investors can bid higher than starters since their aim is not self-occupancy but to make profits by renting out the property or through property flipping (Hans et al., 2019).

However, an exemption has been made on the 8% general transfer tax regulation which can be especially essential for (fix and flip) property flipping. The exemption entails that when re-selling a property within six months after buying the 8% general transfer tax can partly or fully be refunded (Belastingdienst, 2022). Therefore, it is essential to renovate the house within six months to increase investment returns since this saves a lot of money. Although, this is what makes fix and flip investments risky since renovations can be delayed or mismanaged violating the 6 months deadline and diminishing the profits.

Furthermore, the taxes applicable to property flipping will be briefly explained otherwise the achieved profits might be interpreted too optimistic. The tax system is divided into 3 so called boxes (Rijksoverheid, 2022). Fix and flip investors often set up private companies and therefore pay taxes according to the box 2 tariff. The profit on the fix and flip is taxed between 40% and 43.75%, which comprises both income tax and corporation tax (Rijksoverheid, 2022).

2.5 Theoretical framework explained

For this research about fix and flip property flipping a theoretical framework has been constructed. This theoretical framework will help in understanding the research outline. According to Depken et al. (2009) fixing and flipping properties entails buying a poor conditioned property, renovate it and sell it again in a short period of time. Those main aspects are centered in the middle of the framework as 'Buy Property-Renovate-Sell Property'. Furthermore, the crucial elements to answer the research question as discussed above are implemented in the framework. These elements are pricing, characteristics, and taxes. Pricing can be seen as the price difference between 'Buy Property' and 'Sell Property'. During the renovation 'Old characteristics' become 'New characteristics' although some old characteristics stay and therefore this is depicted as circular process of mixing new and old characteristics in the framework. Taxing takes place at the frontend and backend of a fix and flip process. In the frontend, when buying a property transfer tax is paid and in the backend, this might be reimbursed if uphold to the six months transfer tax regulation. In the backend also taxing takes place based on the 'boxes' tax system of the Netherlands. Finally, the results must be deducted for the average market price increase since this property appreciation was also realized without fix and flipping.

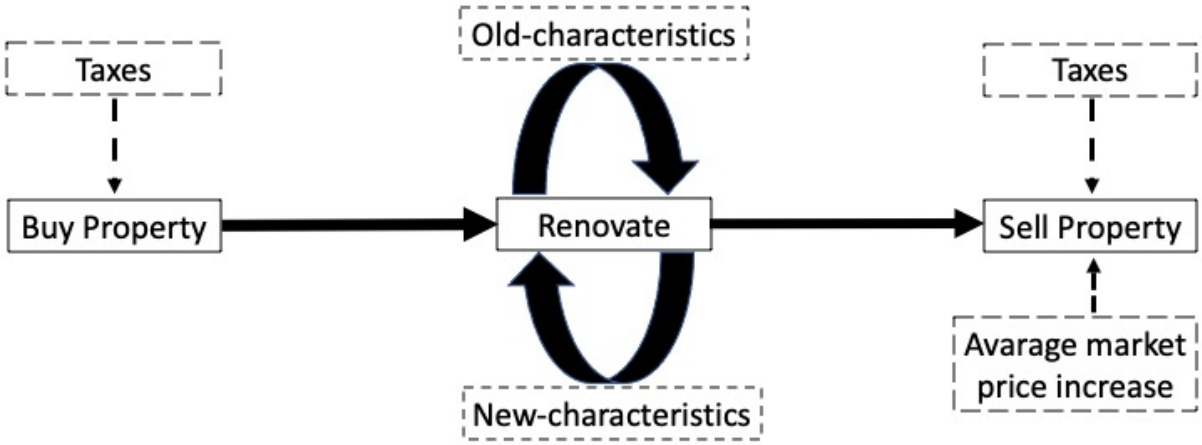


Figure 1: Theoretical Framework

2.6 Hypothesis

The hypotheses on the sub research questions will first be formulated before formulating a hypothesis on the main research question.

To start with the spatial location. Based on the research from Anacker et al. (2015) most real estate flipping takes place in so called hot real estate markets. Translating these outcomes to Dutch cities, this research will probably show higher numbers of property flipping in the Randstad and in general more flipping in big cities. Since these areas are the hot real estate markets of the Netherlands (BPD bouwfonds gebiedsontwikkeling, 2021). Research from BrainBay (2022) shows same results indicating that most properties are being flipped in the 4 biggest cities of the Netherlands. Although the highest investment return rate is achieved in suburban areas according to (Allen et al., 2015). Therefore, the hypothesis on spatial location for this study will be: the amount of houses fixed and flipped is the highest in the Randstad and big urban cities. Although, the investment return rate will be the highest in suburban areas.

Secondly the characteristics. Based on the research literature from Allen et al. (2015) older and less maintained houses are more suitable for fixing and flipping. Depken et al. (2009) states that flip houses tend to be smaller than other houses. Furthermore, flip houses tend to be cheaper than the average house price BrainBay (2022). Therefore, the hypothesis on characteristics for this study will be: fix and flip houses are older, cheaper and smaller than the average house and have more square meters after a flip than before.

Lastly a 0-hyptothesis will be formulated for the main research question. There is no linear relationship between the independent variables date between sale and offering and property area size m^2, and the dependent variable fix and flip profits.

3. Methodology

To answer the formulated research question and accompanying sub questions proper data collection was necessary. After setting up the theoretical framework for this research, insights had been gained on the data collection requirements. The starting point was the definition of fix and flip property flipping. According to Depken et al. (2009) fixing and flipping properties entails buying poor conditioned properties, to renovate them and sell them again in a short period of time. Relating this to the main research question, what are the best predictors for a profitable fix and flip in the Netherlands in 2021, it was clear what elements the data had to contain. The difference in price between the buy and the resale of a property that meets the criteria for a fix and flip property must be possible to be derived from the data. Especially the timespan between the buy and resale of a property was needed to be known from the data since that is the most important denominator of property flipping. The following options were available for proper data collection.

The NVM (The Dutch Cooperative Association of Estate Agents) is the most usual option for data collection about real estate topics since they have access to almost all real estate market transactions in the Netherlands. Detailed characteristics of properties are described in these NVM datasets. Even though the timespan between buy and resale, transaction prices and many more characteristics could be derived from those NVM datasets, the datasets contained one crucial limitation. For this research only fix and flip property flipping is researched and not flipping in general. The difference between these two methods is described in the introduction. It was not possible to make a distinction between fix and flip property flipping and normal property flipping based on the NVM datasets. Another limitation was that the dataset also entailed errors since not every house that is quickly resold, is indeed aimed at flipping the house. Other reasons for a quick resale are for instance divorce, relocation, job loss or pending foreclosure. Those errors would be included into the analysis worsening the results.

The other and selected option for this research was ‘Funda Makeovers’ (Fundamakeovers, 2022). Funda is the most visited real estate website in the Netherlands with monthly 43 million visitors (Funda, 2022). Funda is a Dutch organization which publishes almost all real estate that is available for sale on the market on the internet. Funda Makeovers is a webpage that only publishes fix and flipped properties derived from Funda. Those properties are sent

in by a community of people with general interests into fix and flip properties then verified and posted on the webpage of Funda Makeovers. The post of the fix and flip property contains the following information: pictures of before and after the fix and flip, location details, ask price before and after the fix and flip and the number of square meters before and after the fix and flip. The date of buy and resale and the building year could be derived by searching the specific fix and flip house on Funda. I put all this data manually into an excel file to be able to perform analyses on the collected data. Only the Funda Makeover posts from fix and flip properties that were resold in 2021 are put into the excel file since the research question is about the year 2021. This resulted in a dataset of 229 fix and flip properties that were resold between 01-01-2021 and 31-12-2021. The data does not contain errors like the NVM data does since all houses posted on the Funda Makeover page are fix and flip properties. Therefore, no resales due to divorce, relocation, job loss or pending foreclosure are included in the dataset. It was also not necessary to make a distinction between fix and flip property flipping and normal property flipping since all houses posted on the Funda Makeover site are fix and flip properties.

The quality of the data on fix and flip properties from Funda Makeovers will be discussed since it has positive and negative aspects to it. The sent in properties are carefully verified and checked by an administrator before posted on the Funda Makeovers website. I also checked each property on Funda if it existed and if the information was corresponding with the Funda Makeovers website. This needed to be done anyway since I needed to derive the date of buy and resale, and the building year from Funda.

Although the data contained some possible quality problems. The research is about fix and flip properties in 2021 however the dataset does not contain all the fixed and flipped properties of 2021. This is because properties are sent in by a community of people with general interest into fix and flip properties. This might lead to sampling bias. Although according to Brainbay (2022) at most 600 properties were fixed and flipped in the Netherlands and my excel dataset contains 229 fixed and flipped properties for 2021. This is 38.2% of the total amount that was fixed and flipped in 2021 and therefore helps to reduce the amount of sampling bias. Larger samples produce estimates that better approximate the population parameters (Asiamah et al. 2017). A better-quality source than Funda Makeovers does not exists since this is the only source where fix and flip property flipping could be derived from in the Netherlands.

Besides this, a crucial limitation of the collected data is that there is no information on the renovation costs associated with the 'fix' in fix and flip property flipping. It is extremely hard to include this into the data since no organization publishes this information due to privacy regulations. All the authors of the described literature in the theoretical framework encountered the same renovation cost information limitation. A proper way to solve this limitation is not available since the renovation costs cannot be averaged out due to property specific renovations. However, the only solution is to be aware of the renovation costs and to realize that the returns on investment are therefore on the high side.

Furthermore, the justification of the chosen timespan between the buy and resale of a property must be described. This will be done based on available literature about property flipping. Depken et al. (2009) and Bayer et al. (2011) define a flip as a pair of transactions involving the same property that occur less than 2 years apart. BrainBay (2022) defines flipping as properties that are resold within 365 days. Based on these literature sources it was decided to use a timespan of 18 months between buy and resale to define flipping in this research.

The created dataset in excel now contained the necessary data to do analyses in order to finally give a proper answer to the formulated main research question and accompanying sub research questions. The research method that is used on the collected quantitative data is multiple linear regression.
In a geographical information system (ArcGIS pro) data visualizations will be performed resulting in spatial maps. The underlying exploratory data analysis of these spatial maps will be interpolation of points.
These research methods are chosen because they are most suitable in combination with the collected data and the research questions. In addition, it is also possible to compare these generated research results with the results from other literature sources.

4. Results

4.1 Predictors for a profitable fix and flip

A multiple linear regression has been performed on the dataset with 229 cases on the variables in table 3. It has been tried to add more variables in the multiple linear regression. However, the inclusion of dummies for construction period and location did not lead to significant results. Likewise, the other variables, number of rooms, price per m^2 original and price per m^2 after the fix and flip did not as well.

The dependent variable 'flip profit' is defined in the regression as the price increase in percentage between buy and resale price, corrected for the average market price increase. This is a detailed correction since for each specific case in the dataset a market price correction has been performed based on the specific dates between sale and offering. The information on average market price increase per month is retrieved from CBS (2022). Performing this market price correction was necessary for a proper multiple linear regression with these variables. Without a correction a linear relation between 'flip profit' and 'days between sale and offering would always have been found since the 2021 period is characterized by increasing property prices. This methodology excludes general market appreciation from the dependent variables such that the effects of the fix and flip can be isolated.

After correction the mean 'flip profit' is 45.72%. The standard deviation is 30.42 what means that the difference in 'flip profit' between cases in the dataset is big. This can be explained by the fact that fix and flip property flipping is very case specific and therefore profits deviate more.

The independent variables in this multiple linear regression are 'property area original (m^2)' and 'days between sale and offering'. The linear relation of these two variables on the dependent variable 'flip profit will be tested. The mean property area size before the flip is 111.81m^2 with a standard deviation of 34.122. The mean days between sale and offering is 254.88 with a standard deviation of 113.034. Looking at the standard deviation it can be observed that the difference in buy-resale timespan between cases in the dataset is big which is caused due to the same case specificity as described above.

Descriptive Statistics

	Mean	Std. Deviation	N
Flip profit	45.7201471	30.4263211	229
Property area original (m^2)	111.81	34.122	229
Days between sale and offering	254.88	113.034	229

Table 3: Descriptive statistics multiple linear regression

In the model summary the results of the multiple linear regression are displayed (table 4). To start with the adjusted R square. This indicates how much of the variance in the dependent variable 'flip winst' is explained by the independent variables 'property area original (m^2)' and 'days between sale and offering'. The adjusted R square is 0.064. This means that 6.4% of the 'flip winst' is explained by property area size and days between sale and offering.
The F-test is used to accept or reject the proposed 0-hypothesis. The probability of observing a value of 8.812 or greater is less than 0.001 as can be seen in the Sig. F. change column. Therefore, it can be concluded that the independent variables are jointly significant in this multiple linear regression and that the 0-hypothesis should be rejected.

Model Summary[b]

Adjusted R Square	F Change	Sig. F Change
.064	8.812	<.001

a. Predictors: (Constant), Days between sale and offering, Property area original (m^2)
b. Dependent Variable: Flip profit

Table 4: Model Summary multiple linear regression

The t-test shows that the relation between 'property area original (m^2) and 'flip profit' is significant since the significance is smaller than the critical level of 0.05.
This means that 1m^2 increase in property area size results in 0.157 percentage points flip profit, keeping days between sale and offering constant. The t-test also shows that the relation between 'days between sale and offering' and 'flip profit' is significant since the significance

is smaller than the critical level of 0.05. This means that 1 day increase between sale and offering results in 0.048 percentage points flip profit, adjusted for the effect of property area size.

Therefore, the 0-hypothesis must be rejected, so there is a positive linear relationship between the predictors; property area size and days between sale and offering and the dependent variable; achieved flip profits. The more days between sale and offering and the bigger the property area will result in higher fix and flip profits. The formula below describes the model. The coefficients can be found in table 5.

$$Price\ increase\ (\%) = \beta_0 + \beta_1 \cdot property\ area\ (m^2) + \beta_2 \cdot days\ between\ sale\ and\ offering\ (days)$$

Coefficients[a]

	Unstandardized B	t	Sig.	95% Confidence Interval for B	
				Lower Bound	Upper Bound
(Constant)	15.933	2.117	.035	1.102	30.763
Property area original (m^2)	.157	2.710	.007	.043	.270
Days between sale and offering	.048	2.762	.006	.014	.083

a. Dependent Variable: Flip profit

Table 5: Coefficients multiple linear regression

The result of the multiple linear regression on days between sale and offering is not in line with the literature described in the theoretical framework. According to Allen et al. (2015) flippers should complete their flips as quickly as possible to maximize their investment returns. Although the multiple linear regression suggests that a bigger timespan between sale and offering will create higher investment returns. A possible explanation for this discrepancy is that the literature examines both forms of property flipping. This study only

analyses fix and flip property flipping which is heavily depended on renovations. More time between sale and offering will in this case result in more time for large-scale renovations which will result in higher 'flip profits'. The renovation costs are not included in flip profits.

The result of the multiple linear regression on property area size is in line with the literature described in the theoretical framework. Since larger property areas are often to be found in suburban areas CBS (2018) and suburban areas are profit-wise better locations for fix and flip property flipping as elaborated below. This will be further discusses in the next chapter in which spatial location is taken into account.

4.2 Spatial location

To start with the location of the fix and flip properties in the dataset which is spatially displayed in map 1. Interesting is that most fix and flipping takes place in the Randstad area and in general in or nearby bigger cities. Next to Amsterdam, Rotterdam, The Haque and Utrecht also Breda, Haarlem, Eindhoven and Tilburg have large numbers of fix and flip property flipping. Rural areas are less prominent to fix and flip property flipping. In table 6 the percentages of the 10 most popular cities for property flipping are displayed. Comparing table 6 to the results from BrainBay et al. (2022) displayed in table 2, it shows almost a similar top 10. The only difference is that Almere and Amstelveen are not included in this study's top 10 results. Likewise, the percentages are slightly higher for most locations especially for Amsterdam.

Furthermore, when comparing the literature on location aspects as described in the theoretical framework with the obtained results, it seems to be in line with each other. Anacker et al. (2015) described that most property flipping takes place in hot real estate markets. In accordance with this, the results in table 6 only show hot real estate market locations.

Location	Percentage flipped properties in 2021
Den Haag	9.73%
Amsterdam	9.29%
Rotterdam	5.31%
Utrecht	4.87%
Haarlem	3.98%
Breda	3.98%
Eindhoven	3.10%
Amstelveen	2.21%
Tilburg	2.21%
Hilversum	2.21%
Voorbrug	1.77%

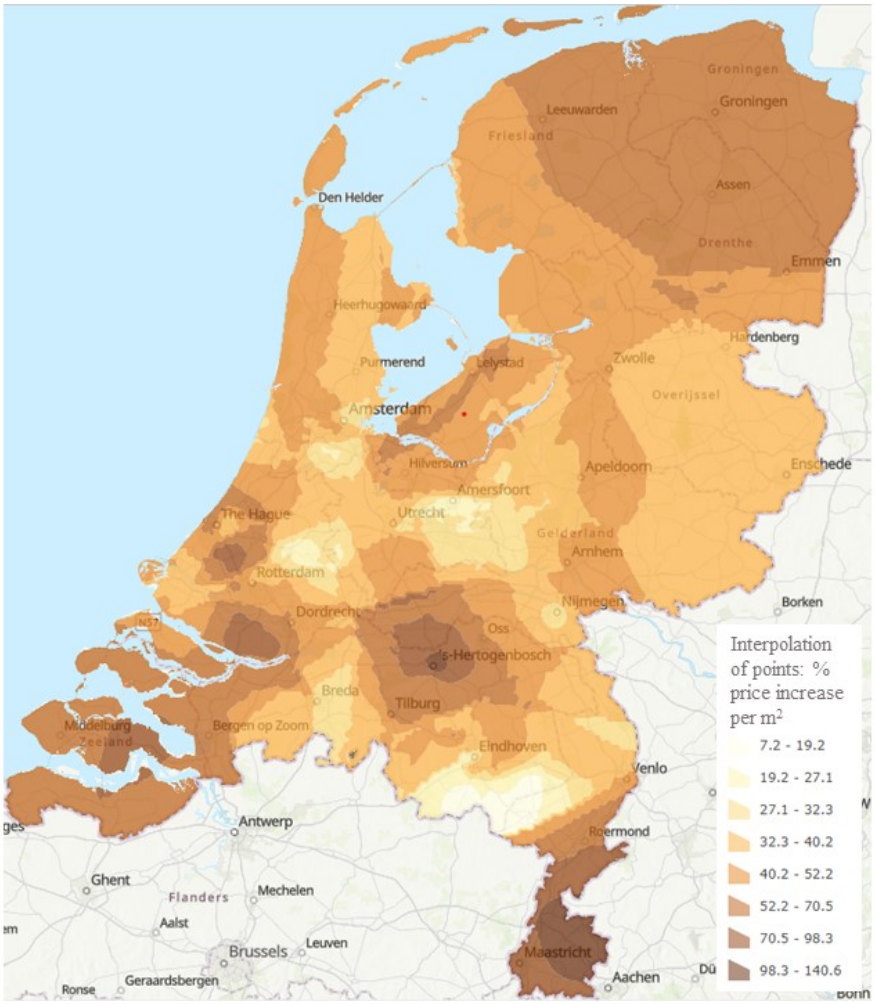
Table 6: Percentage flipped properties per location in 2021 from dataset

Map 1: Location of Fix and Flip properties from dataset

Secondly, in map 2 an interpolation of points of the percentage price increase per m^2 before versus after the flip is performed for the Netherlands. This variable is chosen because a lot of properties increased in square meters after a renovation. Otherwise, the results would not be corrected for this effect and this would create a wrong distribution. The interpolation resulted in a proper map where profit-wise the best spatial locations for fix and flip property flipping could be derived from. A detailed analysis on map 2 gives interesting outcomes.

The north of the Netherlands, Limburg, s'Hertogenbosch and Zeeland stand out as perfect locations for a fix and flip property flip. Since profit-wise the highest percentage price increase before versus after the flip per m^2 is realized in these areas. Although zooming in on the map other spatial patterns can be derived from the results. The biggest cities of the Netherlands, Amsterdam, Rotterdam, Den Haag, Utrecht, Eindhoven and Breda have very light colors on the map. This means that these places have a low percentage price increase per m^2 and thus are profit-wise bad spatial locations for fix and flip property flipping. When analyzing, the results of map 2 show that the less densely populated areas and smaller rural cities are often profit-wise the best spatial locations for fix and flip property flipping. Outstanding are the north of The Netherlands, Limburg, s'Hertogenbosch and Zeeland.

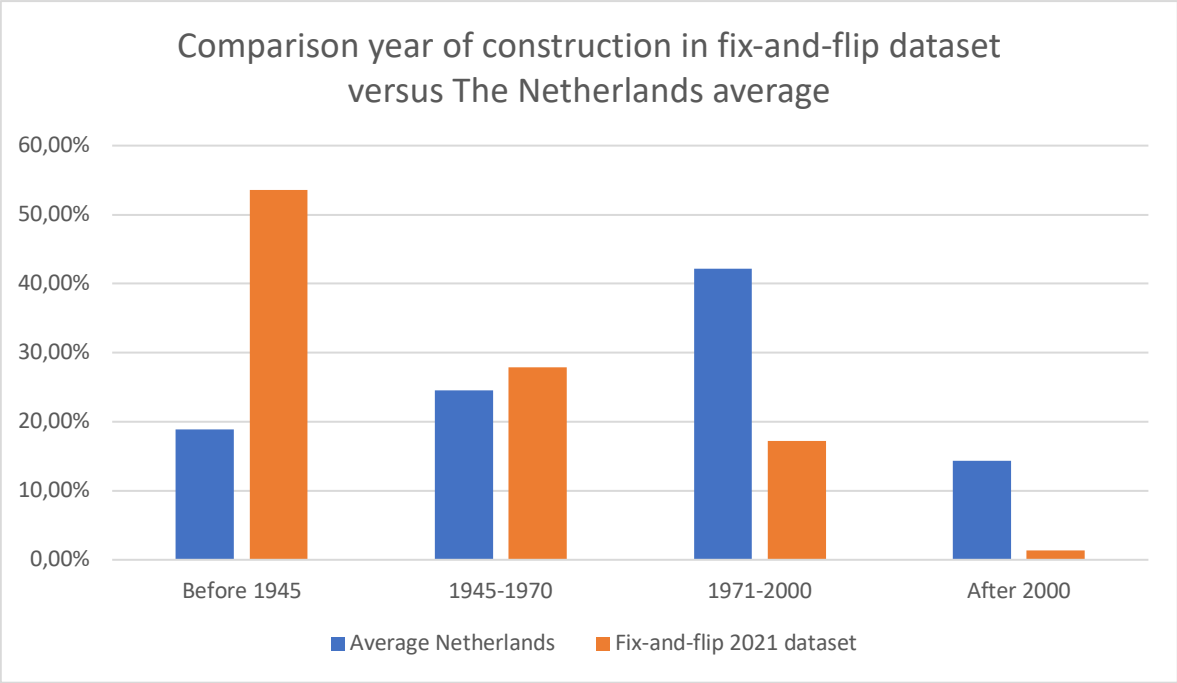
Comparing these results to the literature described in the theoretical framework gives matching outcomes. Because according to Allen et al. (2015) houses located in central city areas appreciate slower than houses located in suburban areas. The results of this study agree with this.



Map 2: Interpolation of points: %price increase per m²

4.3 Characteristics

To start with the results concerning the construction year of fix and flip properties. The average construction year of a fix and flip property is 1944 in the dataset. However, to properly compare this result with the average construction year in the Netherlands (graph 1) the construction years in our dataset have been classified into the same construction periods. The results are visualized in graph 2. Graph 2 clearly shows that fix and flip properties are significantly older than the average property in the Netherlands. Almost no fix and flip properties are constructed after the year 2000 and more than 50% of them are constructed before 1945. This is in line with Bayer et al. (2011):'older homes or fixer-uppers can benefit from substantial renovations before being re-sold, more than recently build homes'.



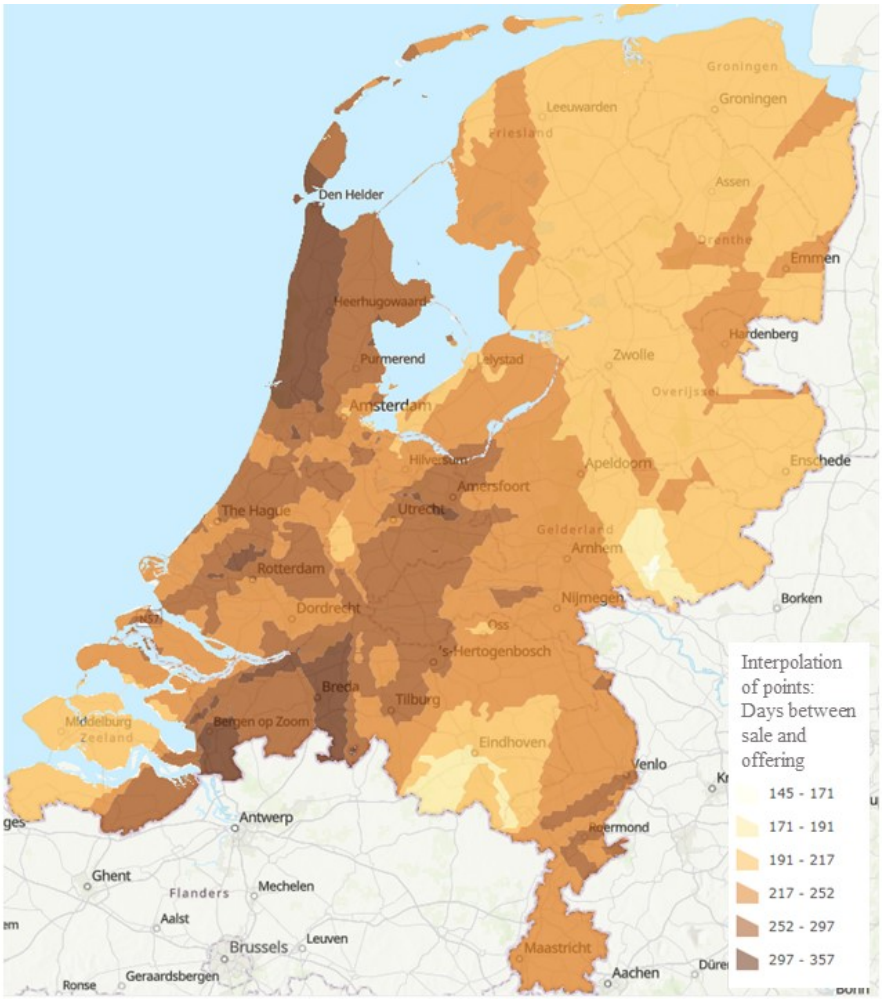
Graph 2: Comparison year of construction in fix-and-flip dataset versus The Netherlands average.

Furthermore, the results show an increase in square meters between before and after the fix and flip. The average size of a property before a fix and flip is 112m^2 and after a fix and flip it increases to 120m^2. Resulting in a size increase of 8m^2. This means that the average fix and flip house is bought below the average house size of 120m^2 in the Netherlands (CBS, 2013). Comparing these results to the results form BrainBay (2022), the difference in size increase is 2m^2 since their results show an average size before flipping of 105m^2 and after flipping 111m^2. The difference in results between this research and BrainBay's (2022) research can be explained because our dataset is explicitly focused on fix and flip property flipping what entails more renovation activities which very likely leads to more property size increase.

Fix and flip properties are bought on average for 347.085 euros. This is below the average housing price of 387.000 euros in 2021 (CBS, 2022). This is as expected since fix and flip properties are often the smallest, oldest, and least maintained houses in neighborhoods (Allen et al. 2015). These houses must be priced under the market value since renovation or 'fix' cost are high.

Lastly, the average number of days between buy, fix and resale is 249. This indicates that the exemption of transfer tax regulation has no big influence on the fix and flippers since the

property must be resold within half a year to qualify for this. Another explanation can be that it is hard and risky to plan for a renovation and therefore difficult to be finished on time. Interesting is to see at which locations the properties are resold quickly and therefore an interpolation of points on the variable days between sale and offering is executed in map 3.



Map 3: Interpolation of points: Days between sale and offering.

5. Conclusion

To start with the conclusion on the main research question. The average fix and flip profit achieved in the Netherlands in 2021 only corrected for market price increases was 45.72%. Furthermore, after trying to include various variables into the multiple linear regression only days between sale and offering and property area size were found to have a significant positive relation on fix and flip profits. Therefore, these variables are the best predictors for a profitable fix and flip explaining 6.4% of the fix and flip profits.

Most fix and flipping took place in the Randstad area and in general in or nearby bigger cities. Although results showed that this were profit-wise not the best spatial locations for fix and flip property flipping. An interpolation of points analysis in GIS on the variable percentage price increase per m^2 showed that smaller rural cities are profit-wise the best spatial locations for a fix and flip property flip in the Netherlands. Outstanding are the north of The Netherlands, Limburg, s'Hertogenbosch and Zeeland.

Furthermore, fix and flip properties have some specific characteristics. Firstly, the year of construction of fix and flip properties is older than the Dutch average. Over 50% of the fix and flip properties is constructed before 1945. Secondly, fix and flip properties increase on average $8m^2$ in size during a fix and flip and are smaller than the average house size in the Netherlands. Furthermore, the average price of a fix and flip property is 347.085 euros which is below the 387.000 euros Dutch average. Lastly, the average number of days between buy, fix and resale is 249.

5.1 Strengths, weaknesses, and recommendations

The strength of this research is that profit-wise the best geographical locations for fixing and flipping are visualized in detailed GIS maps. Adding this location aspect to fix and flip profit calculations has never been done before. Furthermore, the dataset that has been used in this research based on information from FundaMakeovers is unique since it already distinguished the two forms of property flipping. This eliminated the error of unintentionally including normal property flips in the analysis which decreases the quality of the results.
Lastly, there existed a research gap on this topic in the Netherlands and this research contributed to solve this.

The weakness of this research is that there is no data available on the construction cost associated with the renovation of the property. Therefore, the profits on fix and flip property flipping are too optimistic.

Recommendations for further research include similar research on fix and flip property flipping in another timeframe, for instance comparing fix and flip property flipping in 2010 with 2021. Furthermore, it would be interesting to research fix and flip property flipping return rates adjusted for construction costs. Lastly, there is a lot of literature on renting properties available but there is still a research gap on fix and rent property flipping.

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Appendix

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.269[a]	.072	.064	29,4344753
R Square Change	**F Change**	**df1**	**df2**	**Sig. F Change**
.072	8.812	2	226	<.001

a. Predictors: (Constant), Days between sale and offering, Property area original (m^2)

b. Dependent Variable: Flip profit

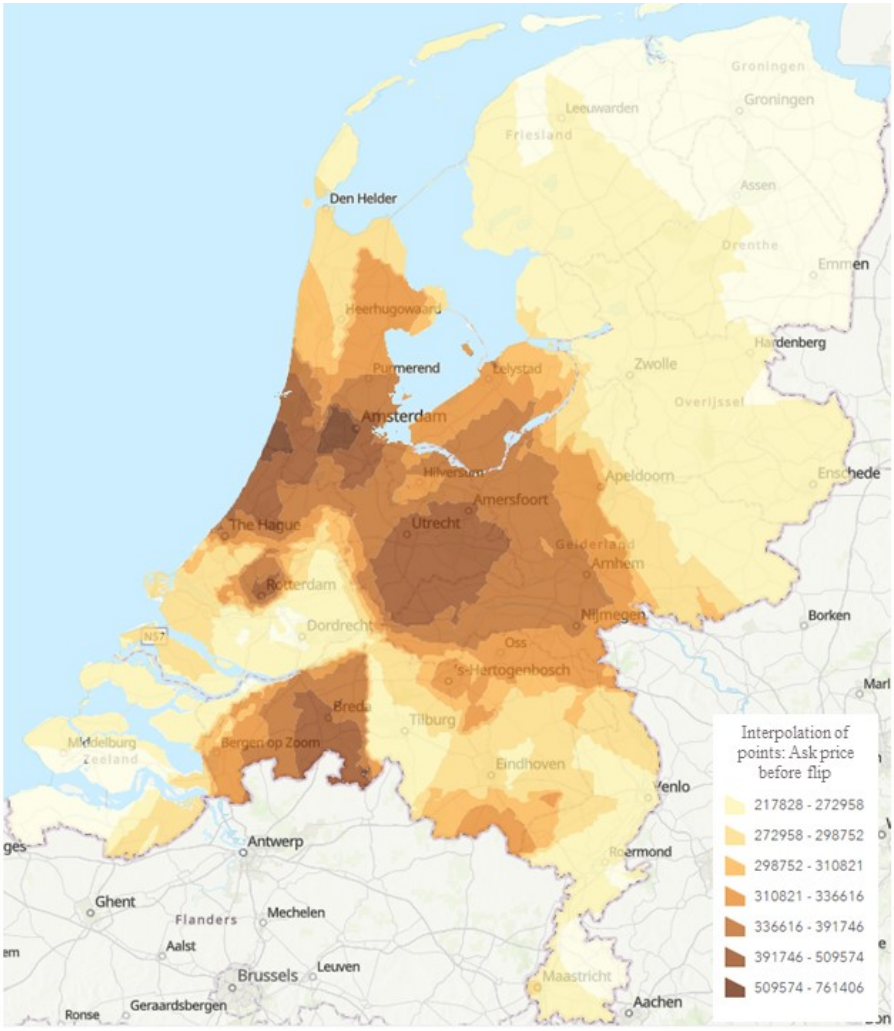
Table 7: Model Summary multiple linear regression

Coefficients[a]

Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t
1	**(Constant)**	15.933	7.526		
	Property area original (m^2)	.157	.058	.176	
	Days between sale and offering	.048	.017	.179	
		t	**Sig.**	**95% Confidence Interval for B**	
				Lower Bound	**Upper Bound**
		2.117	.035	1.102	30.763
		2.710	.007	.043	.270
		2.762	.006	.014	.083

a. Dependent Variable: Flip profit

Table 8: Coefficients multiple linear regression



Map 4: Interpolation of points: Ask price before fix and flip