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## Size and type of places, geographical region, satisfaction with life, age, sex and place attachment

**Abstract:** The topic of the article concerns the issue of place attachment and its determinants. An analysis of place attachment was performed in terms of place identity and place dependence (Williams, Vaske, 2003). Moreover, links between place attachment and selected geographical (size and type of place, geographical region), demographic (age, sex) and psychological (satisfaction with life) variables were investigated.

The study group included 759 respondents: 398 women and 361 men, aged 18–83 years, residing in 74 places in the Silesian Province, a region in Poland: in 10 sub-regions in the Upper Silesian conurbation and outside the conurbation. The study used the Place Attachment Scale (Williams, Vaske, 2003), the Satisfaction with Life Scale (Diener, Emmons, Larsen, Griffin, 1985) and a personal information section containing questions regarding place of permanent residence, sex and age.

Results showed that subjects residing in smaller and non-industrial places had a stronger place attachment than those residing in larger and industrial cities. People living outside the Upper Silesian conurbation were more strongly attached to their place of residence in terms of place identity than those residing in the Upper Silesian conurbation. People living in the Zagłębie (industrial) sub-region were more strongly attached in terms of place dependence than those residing in the Bytom sub-region (devastated with high unemployment). Satisfaction with life was positively correlated with place attachment. Older subjects were more strongly attached to their place of residence. Men and women did not differ in the sense of place attachment and life satisfaction.

**Key words:** place attachment, satisfaction with life, Silesian Province in Poland

### Introduction

Analyses of place attachment have started only recently, in terms of humanistic geography and environmental psychology. Researchers dealing with this problem point to the fact that the notion of place differs from that of space. Space may be described by means of objective criteria of a given location, e.g. using geographical coordinates; on the other hand, a place is a subjective sense of space. A place involves an emotional attitude of humans towards a specific space which is of significance to those who occupy it (Relph, 1976; Tuan, 1987; Bańka, 2002; Lewicka, 2012; McClay, McAllister, 2014).

Place attachment is defined as a positive emotional bond between people and their place of residence (Low, Altman, 1992; Stokols, Shumaker, 1981; Lewicka, 2011, 2012). It involves a physical dimension, i.e. relations with place as a physical space, and a social dimension, understood as a link with people present in it, one's

neighborhood and local communities (Scannell, Gifford, 2010; Raymond et al., 2010), and providing a sense of rooting (or its lack) (Relph, 1976). The nature of bonds with a place may be individual as well as socio-cultural (Raymond, Brown, Weber, 2010). Place attachment may be the result of an individual's personal experience associated with a given place, or it may result from the socially and culturally determined symbolism of a specific place (Mazumdar, Mazumdar, 2004; Billig, 2006). Apart from specific places important for individuals, attachment may also pertain to symbolic places which are important for a given community in terms of history, religion, conventions and politics (e.g. Wawel, Jasna Góra, Westerplatte – in Poland).

Place attachment is most often analyzed as a construct comprising two dimensions: place identity and place dependence. Place identity constitutes an important element of human identity (Proshansky, Fabian, Kaminoff, 1983; Twigger-Ross, Uzzell, 1996). A place allows us to be

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distinguished from others; it may be a source of positive self-esteem, and provide a sense of continuity, effectiveness and control over one's surroundings. Place identity also refers to the symbolic significance of a place, and to emotions and relations which are of great significance to people's lives. It is an important element of identity, reinforcing the sense of belonging to one's own community (Ralph, 1976; Tuan, 1980). This aspect of place identity increases over time and is usually linked with psychological investments related to a specific place (Giuliani & Feldman 1993). It may be reflected in the following statement: "I feel 'X' is a part of me". (Williams, Vaske, 2003, p. 835).

Place dependence is an instrumental, functional aspect of place attachment. It refers to the significance of place for various human activities, providing necessary conditions to achieve certain goals and opportunities for supporting such activities. It is related to specific physical properties of the place (e.g. a place with a river which allows the individual to fish; nearby mountains providing an opportunity for skiing). It may be described by the following statement: "'X' is the best place for what I like to do." (Williams, Vaske, 2003, p. 835).

Studies show that place attachment depends on numerous factors related to the characteristics of the place and to human qualities. Among them, one may point to the scale of the place (apartment, house, street, district, town, country, continent) (Tuan, 1975; Hidalgo, Hernandez, 2001; Lewicka, 2010, 2012), size of the place (Kasarda, Janowitz, 1974; Lewicka, 2005), tourist appeal (Williams, Vaske, 2003), district, type of housing (single-family houses, multi-family houses, open or enclosed housing estates) (Harvey, 1996; Lewicka, 2004; Jałowiecki, 2007), height of the building and building floor (Lewicka, 2012). Subjective assessments of the place are also important, especially those concerning the sense of security and residential conditions, e.g. assessment of the place's aesthetics, the condition of the buildings and their surroundings, pleasure of staying, organization, closeness to utility buildings and schools, and city landmarks (Lewicka, 2012; Halpern, 2013; Mandal, 2013).

Personal attributes related to place attachment include first of all social relations: the number of relatives, friends and acquaintances living nearby, the frequency and type of contacts with neighbors, activity and commitment to local communities giving the individual a sense of togetherness and support, and constituting a type of social capital (Kasarda, Janowitz, 1974; Ringel, Finkelstein, 1991; Brown, Perkins, Brown, 2004; Lewicka, 2005). Among individual attributes, there are also mobility, resettlement and migration (e.g. time of living in a given place, commuting to a different city, frequency of relocating, resettlement and migration age) (Cuba, Hummon, 1993; Lewicka, 2012). It is also necessary to point to the economic status: type of ownership (owning or renting a house or an apartment) (Bolan, 1997), education, professional and family status which impact on individuals' mobility (Lewicka, 2010).

The current study is an analysis of place attachment in the context of selected geographical variables (i.e. size,

type of place and geographical region), demographic variables (age and sex) and a psychological variable, i.e. life satisfaction. It has been assumed that these variables are closely interrelated.

Studies of attachment in the context of the domicile size are not unanimous in environmental psychology and humanistic geography. They point to either a small negative correlation between the size of the place and attachment or to the lack of correlation between the scale of the place and attachment (Lewicka, 2010; 2012). They show that attachment has a curvilinear relation with the scale and size of the place. Places are of a concentric nature; smaller places are always embedded in larger ones, e.g. a house is located in a neighborhood which is located in a district; the district is in a city, the city – in a region, the region – in a country, while the country is on a continent. The notions of house and town are more clear categories than the notions of neighborhood or region. People feel a stronger attachment to their houses and towns, and a weaker one to their neighborhoods (Hidalgo, Hernandez, 2001), building and city district (Lewicka, 2012). Attachment to one's neighborhood is stronger in residents of smaller places. It is also related to larger involvement in activities undertaken in small communities. It is weaker in residents of multi-family settlements and stronger among residents of single-family units. The perception of neighborhood borders favors attachment (Gieryn, 2000; Lewicka, 2012).

In the current study, the hypothesis was put forward that place attachment is related to the size and type of place of residence: people living in smaller towns are more attached to the place than those living in larger cities. Place attachment is also related to the type of the place: people living in non-industrial towns are more attached to the place than those residing in industrial places.

The size of the town is related to other characteristics which may moderate the relation with attachment. In smaller towns there are more single-family houses; private ownership of buildings is more frequent, while apartments and houses are rarely rented. Smaller towns are often populated with people whose families have lived there for many generations; they resettle more rarely; there are strong neighbor relations; the sense of security and trust towards people is relatively high (Rowles, 1990; Lalli, 1992; Rowles, Watkins, 1993; Brown, Perkins, Brown, 2004; Lewicka, 2012; Anton, Lawrence, 2014). There is a belief that people in cities live a better life and more comfortably than people in villages (due to more educational facilities and jobs, a developed communication network, high availability of services, a place of cultural events). On the other hand, this perspective has started to change in recent years. We are observing the process of depopulation of cities, which is rooted in migration related to difficulties in finding a job and to the increase in city life inconveniences (crowding, traffic, the low sense of security, environmental pollution, etc.). These factors may prove extremely important for the subjectively perceived quality of life and life satisfaction.

Quality of life in psychology is described as physical, mental, material and social well-being. The perceived

quality of life is influenced by the degree to which one's needs are fulfilled, evaluation of one's own achievements and satisfaction with one's social contacts. If individuals are successful in performing their tasks, their general life satisfaction increases (Raeburn, Rootman, 1996). Life satisfaction is understood as a global assessment of life quality according to individually selected criteria. It is a general evaluation of individuals' life as a whole, without analyzing its specific elements (Shin, Johnson, 1978). It is hypothesized that place attachment is positively correlated with a subjective feeling of life satisfaction: the higher the feeling of life satisfaction, the stronger the place attachment.

An important factor, indicated in the studies, shaping place attachment is also a period of living in a given place. People linked to a certain place for generations appreciate not only its physical features but also its social and autobiographical values. It is important for the identity of the subject as a place of birth, growing up and education, as a place where one's family lives and where one's ancestors used to live. The important elements include social bonds, the number of friends and relatives living nearby, and relations with neighbors. Age is naturally related to the period of living in a given place. Older people usually live longer in a given place than young people (Raymond, Brown, Weber, 2010). Young people are more mobile due to their activities and development tasks: education and searching for a job. The hypothesis was presented that place attachment is related to age: the higher the age, the stronger the place attachment.

People's life activities are related to their gender. Women take care of the home, stay at home and look after children more frequently, while men more often focus on professional activity, leave their permanent place of residence in search for a job (Brannon, 2011; Eagly, 1987). It was hypothesized that women are slightly more strongly than men attached to their place of residence.

## Method

### Research tools

The following test tools were used in the studies:

*Place Attachment Scale* – by Williams and Vaske (2003) (Polish adaptation by Mandal, Moroń, in press). The tool is used for measuring place attachment in two dimensions: place identity and place dependence. It consists of 12 statements, 6 concerning place identity (e.g. *I identify strongly with "X"*) and 6 concerning place dependence (e.g. *Doing what I do at "X" is more important to me than doing it in any other place*). Respondents comment on each statement on a scale from 1 – it does not fit, to 7 – it completely fits the respondent. The sum of points, from 12 to 84 (6–42 points on each sub-scale), is an indicator of place attachment. The more points one obtains, the stronger his/her place attachment is. The value of Cronbach's alpha for the original version of scale is 0.91 for the place identity scale and 0.83 for the place dependence scale.

Constructing a Polish version the two-factor structure of the scale was tested by means of a confirmatory factor analysis. In addition, the two-factor model was compared

with the one-factor model. The comparison showed that the two-factor model better suits the purpose. An exploratory factor analysis was also conducted, in which – on the basis of the scree plot and the Kaiser criterion – a two-factor solution was chosen. Separated factor loads provided the explanation for 72.38% of the variations altogether (Factor 1 – 64.08%; Factor 2 – 8.32%). After the application of the Varimax rotation, Factor 1 provided the explanation of 40.60% of the variations, while Factor 2 – 31.78%. The Reliability of the Polish version of the scale was 0.93 for the place identity scale, and 0.90 for the place dependence scale.

*Satisfaction With Life Scale* – by Diener, Emmons, Larsen, Griffin (1985), (Polish adaptation by Juczyński, 2001). The purpose of the tool is to assess the general sense of life satisfaction. It comprises 5 statements (e.g. *The conditions of my life are excellent*) which the subjects comment on, on the scale from 1 – I completely disagree, to 5 – I completely agree. The sum of points, from 5 to 35, is an indicator of life satisfaction. The more points one achieves, the higher his/her life satisfaction is. Cronbach's alpha indicator is 0.81.

*Personal information section* – contained questions regarding the current, permanent place of residence as well as the sex and age of the respondent.

### Participants and procedure

The research was conducted in the Silesia Province, in southern Poland, centering on the historic region known as Upper Silesia (*Górny Śląsk*), with Katowice as its capital. The towns belonging to the Upper Silesian conurbation were selected on the basis of delimitation (the drawing of boundaries) suggested in geographical studies by Szajnawska-Wysocka, Zuzanska-Żyśko (2013). The Upper Silesian conurbation consists of 18 towns: Katowice, Gliwice, Chorzów, Tychy, Sosnowiec, Zabrze, Dąbrowa Górnicza, Ruda Śląska, Mysłowice, Siemianowice Śląskie, Mysłowice, Świętochłowice, Piekary Śląskie, Jaworzno, Tarnowskie Góry, Czeladź, Będzin, Mikołów. Outside the conurbation there are towns, such as Częstochowa, Bielsko-Biała, Rybnik. (Map 1).

The towns of the Silesia Province were divided into industrial and non-industrial ones. The towns were classified as industrial or non-industrial on the basis of the structure of their inhabitants' employment (GUS 2013). The towns were classified as industrial, in which inhabitants employed in industry prevailed. The towns were classified as non-industrial, in which inhabitants employed in the service sector or in agriculture prevailed. The classification of town functions on the basis of inhabitants' employment structure is one of the most frequently used in geographical research (Suliborski 2010). Not all towns belonging to the Upper Silesian conurbation are industrial (e.g. Katowice, Gliwice, Zabrze), and not all industrial towns of the Silesia Province belong to the Upper Silesian conurbation (e.g. Rybnik, Jastrzębie-Zdrój, Czerwionka-Leszczyny) (Map 1).

In the Silesia Province the division into sub-regions was conducted according to NUTS-3 (Nomenclature of Territorial Units for Statistics – a geocode standard in EU for referencing the subdivisions of countries for statistical

purposes). NUTS-3 in Poland consists of sub-regions that were created by joining counties (*powiat*) together. The number of inhabitants of the sub-regions has to be between 150ths and 800ths. The sub-regions can be characterized by similar conditions, geographical, socioeconomic, historical, cultural and environmental (<http://stat.gov.pl/statystyka-regionalna/jednostki-terytorialne/klasyfikacja-nuts/zasady-wyznaczenia-jednostek-nuts/>) (Map 1).

The study included 759 subjects: 398 (52.44%) women and 361 men (47.56%) from 74 towns in the Silesia Province in Poland. 593 of the respondents (78.13%) lived in the Upper Silesian conurbation, 166 respondents (21.87%) – outside the conurbation, 651 respondents (85.77%) were inhabitants of industrial towns, and 108 respondents (14.23%) were inhabitants of non-industrial towns. The age of the respondents ranged from 18 to 83 ( $M = 32.25$ ;  $SD = 13.62$ ;  $W_{Shapiro-Wilk} = 0.86$ ;  $p < 0.001$ ;  $A = 1.11$ ).

The research was conducted by means of the *snow ball* method among residents of the Silesia Province. The subjects were students of the University of Silesia in

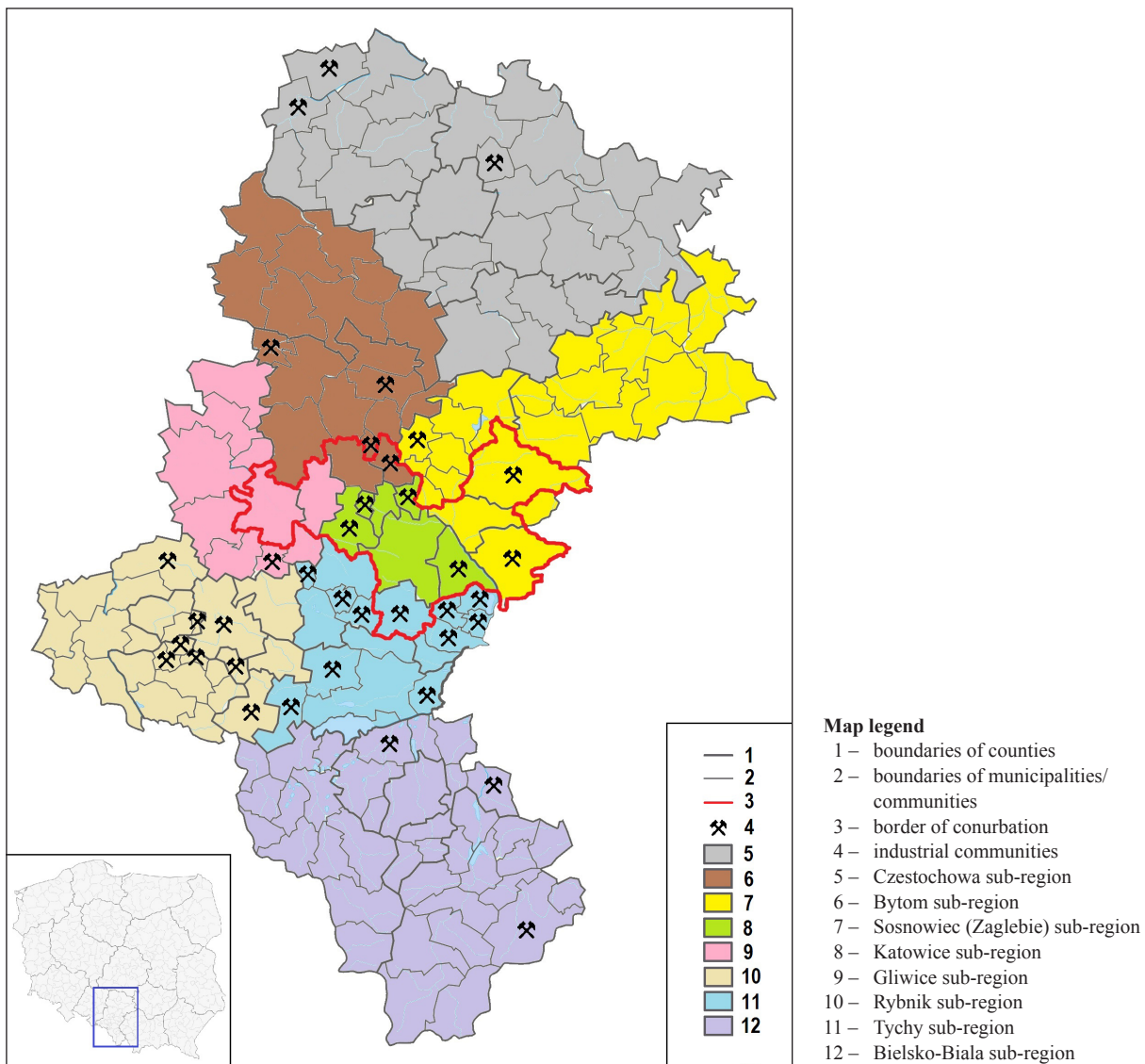
Katowice; part of the research was conducted by pedagogy students from the University of Silesia among their acquaintances, friends and relatives. The participation was voluntary. The subjects received a set of questionnaires arranged in random order. Tests were conducted through personal contacts with the respondents; no Internet studies were carried out. The respondents did not receive remuneration for participating in the research.

## Results

### Demographic variables vs. place attachment

The tests concerning the significance of differences between women and men did not reveal statistically significant differences in terms of the level of place attachment and its dimensions as well as life satisfaction. Both sexes had a similar, average level of place attachment. The mean value for women equaled  $M = 49.56$ , while the mean value for men was  $M = 48.86$  ( $p =$  not significant) (results within the range of 12–84). Both sexes also

**Map 1. Map of the Silesia Province (authorships of the article's author)**





assessed their life satisfaction as average: women  $M = 20.56$ , men  $M = 20.68$  ( $p =$  not significant).

In the analyses of correlations, a positive correlation was noted between age and place attachment – the general score,  $r = 0.21$ ,  $p < 0.00$ , as well as attachment dimensions: place identity,  $r = 0.17$ ,  $p < 0.001$  and place dependence,  $r = 0.23$ ,  $p < 0.001$ . The higher the age, the stronger the place attachment was. Moreover, a positive correlation was noted between the sense of life satisfaction and attachment – the general score,  $r = 0.36$ ,  $p < 0.001$ , as well as attachment dimensions: place identity,  $r = 0.34$ ,  $p < 0.001$  and place dependence,  $r = 0.36$ ,  $p < 0.001$ . (Table 1).

### Size of places vs. place attachment

In further analyses, the respondents were divided into 10 groups in respect of their place of residence: village (population up to 1 ths), 10–25 ths, 25–50 ths, 50–75 ths, 75–100 ths, 100–150 ths, 150–200 ths, 200–300 ths, population over 300 ths. This categorization was strongly correlated with the size of population,  $\rho(757) = 0.99$ ;  $p < 0.001$ . The distribution of the respondents' sex was analogous in each of the place size categories,  $\chi^2(5, N = 759) = 1.96$ ;  $p > 0.85$ .

A variance analysis was performed for the applied categorization, in which the dependent variables were the place attachment factor as well as both place attachment dimensions: place identity and place dependence. The main effect of the place size (categorization into 10 types of places) was noted for the general place attachment indicator,  $F(9, 749) = 1.89$ ;  $p < 0.05$ ;  $\eta_p^2 = 0.02$ , and for the place dependence dimension,  $F(9, 749) = 1.97$ ;  $p < 0.04$ ;  $\eta_p^2 = 0.02$ .

No main effect of the place size was noted for the place identity dimension,  $F(9, 749) = 1.67$ ;  $p < 0.09$ ;  $\eta_p^2 = 0.02$ . The Post-hoc Bonferroni tests indicated that residents of towns with a population of 1–10 ths have a significantly higher sense of place attachment,  $M = 60.35$ ;  $SD = 17.65$ , than residents of towns with a population of 50–75 ths,  $M = 46.99$ ;  $SD = 17.70$ ,  $t(101) = 3.03$ ;  $p < 0.09$ , and residents of cities with a population of 150–200 ths,  $M = 47.07$ ;  $SD = 17.30$ ,  $t(156) = 3.20$ ;  $p < 0.06$ . Similar

differences were observed for the place dependence dimension. Residents of places with a population of 1–10 ths,  $M = 29.60$ ;  $SD = 9.90$ , were more dependent on the place than people in cities with a population of 50–75 ths,  $M = 22.21$ ;  $SD = 8.99$ ,  $t(101) = 3.23$ ;  $p < 0.04$ , than people in cities with a population of 150–200 ths,  $M = 22.00$ ;  $SD = 8.83$ ;  $t(156) = 3.54$ ;  $p < 0.02$ . People residing in cities with a population of over 300 ths,  $M = 22.90$ ;  $SD = 8.90$  showed marginally significant lower place attachment than residents of places with a population of 1–10 ths,  $t(133) = 3/06$ ;  $p < 0.08$ .

A statistically significant positive correlation was noted between the size of the places of residence and the place identity dimension,  $r = -0.08$ ,  $p < 0.03$ . No statistically significant correlation was noted between the size of the place of residence and place attachment (general score) as well as place dependence. No relation was noted between the size of the place of residence and the satisfaction with life (Table 1).

### Residing in the Upper Silesian conurbation or outside the conurbation vs. place attachment

Respondents were divided also into those residing in or outside the Upper Silesian conurbation. The performed t tests indicated that people residing in the Upper Silesian conurbation have a lower level of place identity,  $M = 25.69$ ;  $SD = 9.09$ ; than people residing outside the conurbation,  $M = 27.52$ ;  $SD = 8.89$ ;  $t(757) = -2.30$ ;  $p < 0.02$ ; Cohen's  $d = -0.20$ . At the level of statistical tendency, it was indicated that people residing in the conurbation have a lower general place attachment,  $M = 48.58$ ;  $SD = 17.44$ ; than people residing outside the conurbation,  $M = 51.54$ ;  $SD = 17.03$ ;  $t(757) = -1.94$ ;  $p < 0.05$ ; Cohen's  $d = 0.17$ . The tested groups did not differ in terms of place dependence,  $t(757) = -1.43$ ;  $p < 0.15$ . (Table 3).

### Sub-region vs. place attachment

Respondents were divided also in terms of the geographic sub-region they live in. 8 sub-regions were distinguished: Bielsko-Biała, Bytom, Częstochowa, Gliwice, Katowice, Rybnik, Tychy and Zagłębie.

**Table 1. Means, standard deviations and correlations of the variables**

	M	SD	min	max	1	2	3	4	5	6
1. Sex	–	–								
2. Age	32.25	13.62	18.00	83.00	0.03					
3. Place identity	26.09	9.07	6.00	42.00	-0.04	0.17***				
4. Place dependence	23.14	8.95	6.00	42.00	0.00	0.23***	0.86***			
5. Place attachment (general score)	49.23	17.38	12.00	84.00	-0.02	0.21***	0.96***	0.96***		
6. Satisfaction with life	20.62	5.53	5.00	35.00	0.01	0.04	0.34***	0.35***	0.36***	
7. Size of place <sup>a</sup>	–	–			-0.01	0.06	-0.08*	-0.07	-0.08	-0.06

Note. <sup>a</sup> – nonparametric Spearman correlations; \*\*\*  $p < 0.001$ ; \*  $p < 0.03$ .

**Table 2. Means and standard deviations of place attachment, place identity and place dependence in people living in places of various sizes**

Size of place	Place attachment (general score)		Place identity		Place dependence	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Village (up to 1 ths)	52.48	16.60	28.04	8.58	24.44	8.71
1–10 ths	60.35	17.65	30.75	8.58	29.60	9.90
10–25 ths	46.74	19.00	25.21	9.67	21.53	9.88
25–50 ths	51.37	17.51	26.96	9.31	24.41	8.63
50–75 ths	46.99	17.70	24.77	9.32	22.22	8.99
75–100 ths	50.62	18.36	27.06	9.41	23.55	9.59
100–150 ths	49.15	17.23	25.99	9.10	23.16	8.77
150–200 ths	47.07	17.30	25.07	9.10	22.00	8.83
200–300 ths	46.82	15.53	24.62	8.45	22.21	8.00
above 300 ths	48.83	17.02	25.94	8.78	22.90	8.90

**Table 3. Place attachment vs. living in the Upper Silesian conurbation or outside the conurbation in the Silesia Province**

	Conurbation (n = 593)		Outside the conurbation (n = 166)		<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Place attachment (general score)	48.58	17.44	51.54	17.03	-1.94	0.05	-0.17
Place identity	25.69	9.09	27.52	8.89	-2.30	0.02	-0.20
Place dependence	22.89	9.00	24.02	8.77	-1.43	0.15	-0.13

Variance analyses were conducted for place attachment and both its dimensions. The analyses showed the lack of significance of the sub-region factor for the general place attachment indicator,  $F(7, 671) = 1.26$ ;  $p < 0.27$ ;  $\eta_p^2 = 0.012$ , and the identity dimension,  $F(7, 671) = 0.66$ ;  $p < 0.71$ ;  $\eta_p^2 = 0.007$ . On the other hand, a significant effect was noted for the place dependence dimension,  $F(7, 671) = 2.11$ ;  $p < 0.04$ ;  $\eta_p^2 = 0.021$ . Post-hoc Bonferroni tests showed a statistically significant difference in the level of dependence between residents of the Bytom sub-region,  $M = 20.24$ ;  $SD = 7.83$ , and the Zagłębie region,  $M = 24.07$ ;  $SD = 9.25$ ;  $t(219) = 3.19$ ;  $p < 0.05$ . (Table 4).

#### Residing in an industrial city or non-industrial city vs. place attachment

The tested respondents differed in terms of place attachment and both its dimensions, depending on the fact of residing in an industrial or non-industrial city. People living in a non-industrial city  $M = 54.18$ ;  $SD = 16.49$ ; had a significantly stronger sense of attachment to their place of living than people residing in an industrial city

$M = 48.41$ ;  $SD = 17.41$  (757) = -3.21;  $p < 0.001$ ; Cohen's  $d = -0.33$ . Differences were noted both in the general score for attachment as well as in both dimensions of identity and place dependence (Table 5).

#### Place attachment predictors

A regression analysis was conducted for place attachment as well as place identity and place dependence as dependent variables. The following factors were analyzed as predictors: age, sex, sense of life satisfaction and size of place, residing in or outside the Upper Silesian conurbation as well as residing in an industrial or non-industrial place. In the analyzed model of variables, the percentage of explained variances equaled 17%. Life satisfaction ( $\beta = 0.35$ ,  $p < 0.001$ ) and age ( $\beta = 0.20$ ) proved to be predictors of attachment to one's place of living. These variables were predictors of attachment in the general score as well as in both dimensions: place identity and place dependence. Residing in a non-industrial place was related to generally stronger place attachment than residing in an industrial place  $F(6,752) = 27.35$ ,  $p < 0.001$ .

**Table 4. Sub-region of residence vs. place attachment, place identity and place dependence**

Sub-region in Silesian Province	Place attachment (general score)		Place identity		Place dependence	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Zagłębie	50.40	18.12	26.33	9.46	24.07	9.25
Tychy	50.03	17.68	26.39	9.03	23.64	9.18
Bytom	44.63	15.45	24.39	8.51	20.24	7.83
Gliwice	48.88	17.98	25.79	9.35	23.09	9.26
Katowice	48.01	17.36	25.34	8.99	22.68	8.97
Rybnik	51.15	17.27	26.94	9.23	24.21	8.65
Bielsko	47.00	28.28	27.50	14.85	19.50	13.44
Częstochowa	44.17	11.57	26.33	7.23	17.83	4.45

**Table 5. Place attachment vs. living in an industrial or non-industrial city.**

	Industrial city (n = 651)		Non-industrial city (n = 108)		<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Place attachment (general score)	48.41	17.41	54.18	16.49	-3.21	0.001	-0.33
Place identity	25.63	9.09	28.88	8.45	-3.48	< 0.001	-0.36
Place dependence	22.78	8.95	25.30	8.69	-2.72	0.007	-0.28

This dependence pertained also to both attachment dimensions: place identity and place dependence (Table 6).

### Discussion

Study results showed that place attachment is strongly linked to geographical, demographic and psychological factors. Among the analyzed variables, the strongest predictor of place attachment (in general and in both dimensions: place identity and place dependence) was the psychological variable, subjectively felt satisfaction with life. The correlation analyses also pointed to correlations between satisfaction with life and place attachment, in general and in both dimensions. The data confirmed the hypothesis about the positive correlation between life satisfaction and place attachment. They show their reciprocal two-way relation: life satisfaction influences place attachment, place attachment increases life satisfaction. It should be stressed that the domicile has a significant impact on the subjective sense of life satisfaction. The feeling of living in a place with which you are emotionally connected, which you like and perceive as your home, as part of yourself (the place identity dimension of place attachment), the feeling of living in a place where

you can actively pursue your life activities, work, study, relax, develop (the place dependence dimension of place attachment) has a positive impact on the subjective sense of life satisfaction. It may be assumed that life satisfaction and place attachment reciprocally affect each other: life satisfaction is a determinant of high place attachment, but place attachment may also positively influence the sense of life satisfaction and well-being.

Quality of life and neighborhood satisfaction were found to be related to structural aspects of the environment (Lévy-Leboyer, Ratiu, 1993; Amerigo, Aragones, 1997; La Guardia et al., 2000; Lipsetz, 2001; La Guardia et al., 2000). For example, there was evidence of correlation between neighborhood characteristics (such as green space, perceived naturalness and openness, walkability), and neighborhood satisfaction and mental well-being (De Vries et al., 2003; Hur, Nasar, Chun, 2010; Rogers et al., 2011).

In the current research, the demographic variables of age also turned out to be a predictor of place attachment. A correlation was noted between age and place attachment, in general and in both dimensions: place identity and place dependence. This confirmed the hypothesis that place attachment grows with age. Older people feel more attached to their place of living than young people – older people

**Table 6. Results of the regression analysis for place attachment, place identity and place dependence**

	Place attachment (general score)		Place identity		Place dependence	
	<i>adj. R</i> <sup>2</sup>	$\beta$	<i>adj. R</i> <sup>2</sup>	$\beta$	<i>adj. R</i> <sup>2</sup>	$\beta$
	0.17		0.15		0.17	
Sex		-0.03		-0.04		-0.02
Age		0.20***		0.17***		0.22***
Satisfaction with life		0.35***		0.33***		0.34***
Size of place (1–10)		-0.006		0.01		-0.02
Conurbation		0.03		0.04		0.02
Industrial city		0.08†		0.10†		0.06
F (6, 752)	27.35		23.36		27.34	
p	< 0.001		< 0.001		< 0.001	

Note. Sex: 1 – women; 2 – men; Conurbation: 1 – yes; 2 – no; Industrial city: 1 – yes; 2 – no;

\*\*\*  $p < 0.001$ ; †  $p < 0.10$ .

generally live longer in their towns than younger ones, while place attachment is a feeling which develops with time (Rowles, 1990; Rubenstein, Parmelee, 1992; Rowles, Watkins, 1993; Mandal, Latusek, 2015). Older people have more biographical experience and memories related to their place of living (the place identity dimension); they are friends with their neighbors, have “old friends”; they create networks of support and mutual aid; they feel well and safe in their places; they do not want to move and cannot imagine living in a different place (the place dependence dimension).

Meanwhile, among the demographic variables taken into account in the study, the hypothesis that place attachment is related to sex has not been confirmed. No differences were noted between men and women not only with regard to place attachment, but also with regard to the sense of life satisfaction. This shows that men and women are similarly attached to their domicile; it is equally important for them.

The present study showed a relation between geographical indicators and place attachment. It was noted that the majority of domiciles are negatively correlated with place attachment in terms of place identity. People living in smaller towns identify with them more strongly. Meanwhile, no statistically significant correlations have been noted between the size of the place and place attachment in terms of place dependence (and the general result). This result shows that the dimension of place dependence is related to its functions and possibilities of performing various activities important for individuals. Larger towns provide more opportunities in this respect. Professional work is an important human activity and it is easier to secure a job in larger cities; the unemployment rate is smaller and there are various places which offer professional fulfillment. Access to stores, services and offices, which is bigger in larger cities than in smaller

towns, is important in the aspect of place dependence. Important human activities include also leisure, and larger cities offer more cultural events and entertainment venues.

The analyses confirmed the significance of the town’s size for the feeling of place attachment experienced by the subject. They have shown that the largest differences with respect to place attachment pertain to residents of the smallest places, with a population smaller than 10 ths, and to residents of cities with populations larger than 50 ths. It was noted that residents of the smallest places with a population ranging between 1 and 10 ths have generally a significantly higher sense of place attachment than residents of larger places with a population of 50–75 ths and than residents of cities with a population of 150–200 ths. Moreover, it was revealed that residents of the smallest places with a population of 1–10 ths had a higher sense of place attachment in terms of place dependence than people in cities with a population of 50–75 ths, than people in cities with a population of 150–200 ths, and then people living in cities with a population of over 300 ths.

This may be explained by strong family and neighbor bonds as well as picturesque qualities of the smallest places, which provide people with a sense of place dependence and the feeling that their place of residence is optimum for their various life activities. Small communities are not only more strongly interrelated, but they are also well organized, often self-sufficient in the sphere of services, jobs and mutually delivered aid. This indicates the uniqueness and specificity of the smallest places, which involve strong place attachment, both in the general aspect as well as in terms of place identity and place dependence.

Further analyses comparing place attachment due to residing in the Upper Silesian conurbation vs. residing outside the conurbation (the Rybnik, Częstochowa and Bielsko sub-regions) have shown that people living outside the conurbation have a stronger sense of place attachment



in terms of place identity than people in the conurbation, and a slightly higher general sense of place attachment. It may be assumed that the difference stems from the fact that these sub-regions experienced smaller migration than the Upper Silesian conurbation, where many people moved in search of work in this highly urbanized area, especially after World War II and in the period from the 1950s to the 1970s. Thus, a considerably smaller number of immigrants live in the Rybnik, Bielsko and Częstochowa sub-regions than in the remaining regions included in the study. The Rybnik, Bielsko and Częstochowa sub-regions are inhabited by many people with generations of ties to these regions. The Rybnik sub-region is inhabited by numerous people referred to as traditional Silesians, while the Bielsko sub-region has been populated by highlanders for many years. This is related to a strong sense of regional identity, which explains the high sense of place attachment in terms of place identity. Moreover, the Częstochowa sub-region is a Polish and world renowned place of religious cult of Virgin Mary – Jasna Góra in the city of Częstochowa. This is an important part of the cultural identity of the majority of Poles. It is also an important factor of place attachment in terms of place identity of the Częstochowa sub-region residents. The Bielsko-Biała sub-region is attractive in terms of landscape; it has beautiful mountains, numerous leisure places, but also places related to well-known industrial traditions and brands (e.g. Żywiec beer; Bielsko – textile industry). Cities located outside the Upper Silesian conurbation are also smaller than the large cities within it. All these features explain the stronger place attachment of residents of the area outside the Upper Silesian conurbation.

Living in a non-industrial city proved to be a place attachment predictor, in general and in terms of place identity. One may assume that the reason behind this is the fact that industrial cities are usually less appealing in terms of the landscape than non-industrial places and, as indicated by other studies, people feel stronger links with beautiful, attractive places, e.g. with landscape parks. Industrial cities are dominated by work-related places (plants, mines, etc.), they have more multi-family units and less space for leisure and recreation (e.g. parks, lakes, mountains). Industrial cities are rarely places of cultural or sports events; they have fewer venues that offer interesting entertainment and leisure opportunities (movies, theaters, museums, etc.). Industrial cities are also related to larger migration, which hinders forming bonds with one's domicile as well as creating relations among neighbors and other people. Industrial cities are larger than non-industrial ones. All this may explain the higher sense of place attachment in residents of non-industrial cities.

The study included an analysis of place attachment also due to the sub-region of residence. The study included residents of the Silesia Province, in which 8 sub-regions were distinguished: Bielsko, Bytom, Częstochowa, Gliwice, Katowice, Rybnik, Tychy and Zagłębie. The analyses showed a statistically significant difference in the level of place attachment in terms of place dependence only between residents of the Bytom and Zagłębie sub-regions. Residents of the Bytom sub-region were significantly

less attached to their places of residence in terms of place dependence than residents of the Zagłębie sub-region. This difference may stem from the fact that the Bytom region may be perceived as not optimum for numerous life activities. Currently, it is characterized by development stagnation: bad or insufficient housing infrastructure (numerous old, squalid tenement houses), devastation related to industrial activities (buildings damaged due to mining works – the so-called mining damage) and a relatively high degree of unemployment (related to closing down coal mines). Meanwhile, the Zagłębie sub-region is the location of many employers (including the Katowice Steelworks), education venues (there are several large university departments and student campuses in Sosnowiec and Dąbrowa Górnicza), commercial services (numerous shopping and service centers) and leisure places (the Pogoria lake, city pools, movies, theater). The poor condition of the Bytom sub-region in comparison to other sub-regions of the Silesia Province can be confirmed by the data provided by the Central Statistical Office (Główny Urząd Statystyczny – GUS) concerning, e.g. the number of the unemployed, the average monthly salary and the Net migration rate. In 2013 there were 14.3% of the unemployed in the Bytom sub-region, while 9.9% – in the whole Silesia Province. The average monthly salary in the Bytom sub-region was the lowest in the Province (except for the Częstochowa sub-region), and amounted to 3299.45 zloty; the average monthly salary for the Silesia Province was 3825.35 zloty. The Net migration rate for a 1000 of people in the Bytom sub-region equals -3.6, while in the whole Province it is -2.0 (GUS, 2014). The poor condition of the Bytom sub-region, the city of Bytom in particular, as a city that is shrinking (Urban Shrinkage), is mentioned in the literature (Krzysztofik, Runge, Kantor-Pietraga, 2012, Bernt et al., 2014; Kantor-Pietraga et al., 2014).

The current research showed that living in a non-industrial city proved to be a place attachment predictor, in general and in terms of place identity. One may assume that the reason behind this is the fact that industrial cities are usually less appealing in terms of the landscape than non-industrial places and, as indicated by other studies, people feel stronger links with beautiful, physically attractive places, e.g. with landscape parks. Industrial cities are dominated by work-related places (plants, mines, etc.), they have more multi-family units and less space for leisure and recreation (e.g. parks, lakes, mountains). Industrial cities are rarely places of cultural or sports events; they have fewer venues that offer interesting entertainment and leisure opportunities (movies, theaters, museums, etc.). Industrial cities are also related to larger migration, which hinders forming bonds with one's domicile as well as creating relations among neighbors and other people. Industrial cities are larger than non-industrial ones. All this may explain the higher place attachment in residents of non-industrial cities.

The limitation of the current research is the following: the results concern inhabitants of towns and sub-regions of the Silesia Province which are socioeconomically diversified. The results could be confirmed by other studies

concerning more diversified regions of Poland or the world. Moreover, the results may change over time, together with socioeconomic changes of particular regions.

Concluding, place attachment is a fundamental feeling, necessary for proper functioning, which has a significant impact on people's mental well-being and their sense of life satisfaction. Human life always revolves around some space and place where domiciles play a very important role. Place attachment is largely dependent on numerous factors related to individual features; however, the role of geographical factors cannot be overestimated.

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