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Contents

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Internet usage styles and attitudes toward globalization[2]

Abstract:

Our article discusses the research results aimed at finding relations between Internet usage styles and attitudes toward globalization. The research included 597 people, aged 15 to 39 years, from Poland by using two methods: 1) The World-I Questionnaire (by A. Senejko, Z. Łoś) to diagnose attitudes toward globalization (accepting, critical, fearful); 2) The Internet-Interpersonal Relations Questionnaire (by D. Chmielewska-Łuczak) – diagnoses four categories of Internet usage styles (distanced, frustrated, omnipotent, ambivalent).

The research was based on an idiographic analysis focused on the results obtained for the specific people under examination.

The results revealed the relationships between the distanced and omnipotent Internet usage styles and the accepting attitude toward globalization; between the frustrated style and the critical attitude; and between the ambivalent style and the fearful attitude toward globalization. The ensuing discussion can be used to increase Internet user awareness that it is necessary to look for a strategy for coping with the challenges posed by the Internet that is best adjusted to a particular individual. The competence in choosing such an appropriate strategy is a valuable asset for any contemporary manager who would like to target his or her offer at a variety of customers representing different Internet usage styles.

Keywords:

attitudes toward globalization (accepting, critical, fearful), Internet usage attitudes (open, overwhelmed), styles of using the Internet (omnipotent, ambivalent, distanced, frustrated)

Streszczenie:

Artykuł przedstawia wyniki badań z udziałem 597 osób w wieku 15-39 lat, pokazujące powiązania pomiędzy postawami wobec globalizacji a ustosunkowaniem do użytkowania Internetu. Postawa wobec globalizacji jest tu definiowana jako subiektywne ustosunkowanie do różnych przejawów zglobalizowa-

nej rzeczywistości (ekonomicznych, społecznych, kulturowych, politycznych, psychologicznych) będących treścią osobistego doświadczenia. Ustosunkowanie do użytkowania Internetu określamy natomiast jako wyjściową dyspozycję do doświadczania (poprzez spostrzeganie, odczuwanie i zachowanie) rzeczywistości wirtualnej w kategoriach wyzwania (ustosunkowanie otwarte) lub zagrożenia(ustosunkowanie przytłoczone). Postawy wobec globalizacji były badane za pomocą Kwestionariusza „Świat -Ja", gdzie wyróżniono trzy skale: akceptującą, krytyczną i lękliwą postawę do globalizacji. Ustosunkowanie do użytkowania Internetu zbadano za pomocą kwestionariusza „Internet- Relacje Interpersonalne", gdzie wyróżniono dwie skale: ustosunkowanie otwarte i przytłoczone do użytkowania Internetu.

Na podstawie uzyskanych wyników (wysokich) otrzymanych dla każdego badanego w dwóch skalach ustosunkowania do Internetu, wyróżniono cztery style użytkowania Internetu (zdystansowany, sfrustrowany, omnipotentny i ambiwalentny). Wymienione wyżej skale dla obu kwestionariuszy zostały wyróżnione za pomocą analizy czynnikowej z rotacją varimax. Na podstawie przeprowadzonych badań można stwierdzić, że zarówno staż użytkowania Internetu jak i wiek osób badanych wiążą się z postawami wobec globalizacji i stylami użytkowania Internetu.

Słowa kluczowe:

postawy wobec globalizacji (akceptująca, krytyczna, lękliwa), ustosunkowania do użytkowania Internetu (otwarte, przytłoczone), style użytkowania Internetu (omnipotentny, ambiwalentny, zdystansowany, sfrustrowany)

Introduction

This paper explores the possible relations between the attitudes of people aged 15 to 39 years toward globalization and their attitudes toward using the Internet – contemporary globalized reality's most commonly used product and tool.

For a dozen or so years, globalization, defined as a process of strengthening relations and growing interdependence on a worldwide scale (Giddens, 1990; 1991), has attracted keen interest from scholars representing various disciplines of science, and more recently also from sociologists and psychologists (see, for example, Bauman, 1999; 2000; Fukuyama, 1992; Giddens, 1990; Wallace, 1999; Arnett, 2002; Turkle, 2005). The media, Internet, and mobile phone development has been accompanied by a gradual intermingling of cultures, which has also stimulated profound social changes. They are expressed in changed social customs, blending value systems, developing a popular culture that sets new trends and fashions, creating a consumerist lifestyle that promotes itself in advertisements, and in propagating behavior not necessarily advantageous to individuals or to society at large.

Materials and Methods

Manifestations of globalization

As a rule, those scholars depict the present time as a phenomenon that is heterogeneous, dialectical, and full of contradictions and reactance (Giddens, 1991; Bauman, 2000). The

following list of dialectical characteristics of the present reality may be offered in an attempt to make sense of this paradoxical contradictory diversity:

Globality versus locality: interdependence on a worldwide scale is accompanied by centrifugal processes, the desire ethnic groups have to preserve their identity, and so on – but also the reciprocal influence between the global and the local (glocalization[3]);

Unification versus fragmentation: globalization facilitates a uniform culture creation, but it also enables individuals to emphasize their identity, "breaking out" of the unified whole (see anti-globalization movements according to Castells [2000; 2004] as a networking result);

Control versus powerlessness: a number of global institutions control the processes that influence the entire world; on the other hand, growing powerlessness against global risk can also be witnessed;

Authority versus uncertainty: a growing need for authority and experts is accompanied by methodological doubt, undermining authoritative roles, and creating revisionist ideas, methods, and so on;

Devaluating the past and the future versus the primacy of the present: globalization processes are so qualitatively new that the past, preserved in traditions and culture, is no longer regarded as a signpost for the present or, even more so, for future social and individual development. The present, therefore, is that which should be fully utilized by people who are tasked with shaping their identities (Giddens, 1991; Bauman, 2000; Arnett, 2002; Dasen, 2000; Szlegel, 2001).

Attitudes toward globalization in Poland

It is often emphasized (see, for example, Bauman, 2000; Fukuyama, 1992; Arnett, 2002, 2003) that globalization also affects the individual's personal life, influencing how they think about themselves and their relations with others. This provides both opportunities and threats (Łoś & Senejko, 2013).

It is assumed in our study that the diverse ways in which globalization influences the individual's life and development depend most of all on the individual's <u>attitude</u> toward those processes. It is this assumption that forms the basis for the World-I Ques-

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[3] Glocalization – the effect of globalization resulting from the tension between the local and the global. Initially, the term had only had an economic connotation and signified the process of adapting global marketing strategies to individual localities. The term was transferred to the field of social sciences by Roland Robertson, who defined glocalization as an adaptation of global actions to local conditions. Its philosophy can be best summarized by the catchphrase: "think globally, act locally". Various complex processes occur within glocalization: interpretation, translation, mutation and adaptation of global contents, as well as delocalization. It also gives rise to indigenization (localization), creolization (mixing), and hybridization (Robertson, 1994).

tionnaire developed by Alicja Senejko and Zbigniew Łoś. The following three attitudes toward globalization can be distinguished:

a/ *accepting* (focusing on the positive aspects, benefits and opportunities that are made available by functioning in the globalized reality);

b/ *critical* (focusing on the threats posed by globalization and an active or passive protest against its negative aspects);

c/ *fearful* (focusing on the fear caused by various aspects of the globalized reality, the uncertainty if one can cope with the challenges created by globalization).

In Poland, two major political phenomena have exerted considerable influence on the psychological condition of young people within the last two decades. The first was 1989 when the political system changed and the country embarked on democracy, while the second was Poland's joining the European Union in 2004. In principle a positive phenomenon, Poland's political transformation brought a lot of negative experience to the social life in the 1990s. This affected mostly young people, who, having no authorities or mentors with knowledge adequate for the changing conditions, faced challenges that were difficult to handle. They could not even rely on their parents, who were focused on their own everyday problems and desperately seeking their place in the new reality. It is also important to remember that the period witnessed increasing social differences and negative inequities . In contrast, Poland's accession to the EU opened up opportunities for many people to improve their living conditions and fulfill their dreams. Open borders, the possibility to study and work in Western Europe and the opportunity to contact their peers living abroad and to compare their lifestyles and living conditions, all were positive influences on young Poles. On the other hand, insecurity concerning the economy, vague criteria for determining social and professional success, as well as an uncertain and unforeseeable future, all have contributed to the fact that young people today are disoriented and full of doubts (Oleszkowicz & Senejko, 2013).

The Internet as a tool of the information society

Our article focuses on the Internet's role and its influence on communication between people[4]. We emphasize that globalization is an outcome of political, economic, cultural, and social processes. Globalization has gained momentum due to the progress made by information and communication technologies, particularly the Internet, which has considerably increased the speed and range of human interactions worldwide.

The Internet is both a manifestation of globalization and a factor initiating it. Other processes are currently underway that, by increasing access to information, offer "Inter-

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[4]   The enormously dynamic development of the Internet took place within just thirty years. Being increasingly efficient in satisfying people's needs, the Internet transforms their behavior, perceptions, and functioning – and these changes reach beyond the virtual reality (Turkle, 2011).

net support" serving to shape a society embedded in globalization. This quantitative change translates into a qualitative one – participating in creating an information culture may stimulate and give new dynamics to democratic processes and become a driving force for "globalization with a human face" (Korcz, 2005).

The three most distinctive Internet characteristics are that it reduces time and space dividing people, creates interactive online activities, and makes available a wealth of easily accessible information.

Rather than a radically new medium, the Internet is a transmedium – a place where older media digitally combine. It is due to its complexity, sensitivity, and enormous dynamics that the Internet is currently perceived as a new quality (Sokołowski, 2005).

Most crucially, the Internet has transformed social relations. It has made obsolete the principle that information is produced and stored in particular centers, has introduced new subjects to public discourse (by providing people with the means to create and process information), and has enabled the receivers of information to function in a new capacity as both creators and subjects (Sokołowski, 2003; Sokołowski, 2005; Tomsia, 2008; Krawczyk- Bryłka, 2009; Shirky, 2008; 2010; Bernstein, Monroy-Hernandez, Harry, Andre, Panovich, & Vargas, 2011; Bhuiyan, 2011; Burgess & Green, 2009). What is more, a new category of culture participants has emerged: they are transmitters, who provide information and work with the final image (and its importance) by replicating, multiplying and mutating cultural memes (Blackmore, 1999; Brodie, 2004)[5].

But apart from the new opportunities it offers, scholars also underline the emotional, social, behavioral and cognitive problems associated with Internet use. These problems are the consequence of a disturbed ability to self-regulate with respect to individual commitment to Internet or computer activities (cf. Young, 1998; Morahan-Martin, 2005; Shaw & Black, 2008; Szmigielska, 2008; and others).

Characteristics of Internet communication

In the literature on the subject, the characteristics of communication through the Internet are described by sociological models, the most popular being Computer-Mediated Communication[6] (Hiltz, Johnson, & Turoff, 1986; Rice & Love, 1987), but they are also analyzed from the psychological perspective, emphasizing the users' reactions to an incomplete interpersonal situation in the Internet environment. Particular attention should be given to the "cold impression" on the Web (after Wallace, 2005), the "Net effect" de-

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[5] Meme – a term introduced by Dawkins, designating a replicator that spreads similarly to the transmission of genes (Dawkins, 1976, continued by Blackmore, 1999 and Brodie, 2004).

[6] Computer-Mediated Communication (CMC) – a term introduced by the Social Presence Theory (Hiltz, Johnson, & Turoff, 1986; Rice & Love, 1987).

scribed by Aboujaoude (2011),[7] the disinhibition effect (Lea, O'Shea, Fung, & Spears, 1992, after Johnson, 2009), both toxic and benign, according to Suler (2004), the duality function in the Internet environment (feeling isolated and being in contact) described by Turkle (2011),[8] and escalated narcissistic traits (Buffardi & Campbell, 2008).

It is on such an understanding of Internet communication that our study was based in an attempt to diagnose the general attitude toward Internet use expressed in two orientations: openness to various opportunities and functions offered by the Internet (*open attitude*), or the feeling of being dominated by the Internet and losing control over its processes, which overwhelm the user (lack of control over the influx of information as well as over one's reactions and behavior, both his or her own and the partner's – *overwhelmed attitude*).

The second factor that we explored was the attitude toward globalization (*accepting*, *critical* and *fearful*). Whereas globalization appears to be a macrosocial and cultural phenomenon, which is superior to the individuals' psychic processes, one's attitude toward globalization is a subjective psychological phenomenon – one which, in our opinion, is not among the most important psychic processes. It is assumed that the attitude toward globalization is interrelated with other experienced human dimensions, such as experiencing self-efficacy, interpersonal approval or the Internet environment. Therefore, it is not one-sided cause-and-effect relationships, but rather reciprocal ones, that should be expected to exist between the variables examined. Furthermore, such an analysis would emphasize a relative advantage of one phenomenon over others.

The problem being dealt with was operationalized in such a way as to measure experiences in using the Internet (Internet usage styles) by applying the Internet-Interpersonal Relations Questionnaire, and examining attitudes toward globalization by using the World-I Questionnaire.

Aim of the study, research questions and hypotheses

The study aimed to explore whether there is a relationship between Internet usage styles and attitudes toward the experienced globalization. The literature provides no previous research that offers such a perspective on the subject. The question concerning the exist-

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[7] Aboujaoude describes the "Net effect" as comprising impulsivity, dissociation, disinhibition, grandiosity, narcissism, darkness and regression (Aboujaoude, 2011).

[8] Suler (2004a, b) distinguishes benign disinhibition and toxic disinhibition. One of the reasons for disinhibition on the Internet is the feeling of anonymity, which enables people to separate their online activities from their personality and individual lifestyle. As a result, they feel less vulnerable to getting hurt and thus are more willing to open up and express their emotions. Negative disinhibition may share certain points of convergence with the "Net effect" explored by Aboujaoude. In contrast, although it has the same cause, positive disinhibition gives rise to many positive emotions and experiences – people become more confident and affectionate, more willing to open up to others and less guarded about their emotions. They make friends, fall in love and help others more often.

ence of such relations is a complex one, since people experience the Internet in a direct and personal manner, whereas globalization is experienced indirectly and requires an extra-personal world-view perspective to be adopted. With respect to the above aim, the following research questions and related hypotheses were proposed:

Research question no. 1

What characteristics do the people under examination have as regards their attitudes toward globalization and toward the Internet, taking into account their ages and length of Internet experience?

Since most respondents are young people, under thirty-nine years of age, it was assumed that a relatively higher percentage of them would be characterized by an open attitude, expressing both acceptance of globalization and an open Internet usage style (see the research results on the development of identity and the dominant informational identity style for people aged 17 to 35 years – Berzonsky, 2012; Oleszkowicz & Senejko, 2011).

Hypothesis no. 1: Regardless of their age and length of Internet experience, most respondents will exhibit an accepting attitude toward globalization and an open attitude toward using the Internet.

Research question no. 2

Since it was assumed that the attitude toward the Internet may be expressed in particular usage styles (*distanced*, *frustrated*, *omnipotent* and *ambivalent*)[9], the second research question was formed as follows:

What characteristics do people under examination have regarding the four styles of Internet use, taking into account the respondents' age and Internet experience?

Because no current results enable us to advance a hypothesis about usage styles concerning age and Internet experience, no specific hypothesis was proposed in relation to the second question.

Research question no. 3

What are the relations between styles of Internet use and attitudes toward globalization?

It was assumed that the above-mentioned styles are related to various attitudes toward globalization, a relationship that is addressed in the third hypothesis.

Hypothesis no. 3: People characterized by different Internet usage styles will exhibit different attitudes toward globalization.

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[9] According to Turkle, technology and the unique medium of the Internet largely contribute to the fact that people avoid closeness in their relations with others and that they feel both alone and surrounded by other people at the same time. They perceive others as objects to which only limited access can be acquired, or rather, that access can be acquired to the "elements" of these objects that the other person engaged in the relationship deems useful, funny or soothing (Turkle, 2013).

The methodological tools used in the study
Internet-Interpersonal Relations Questionnaire (I-IRQ)

The questionnaire was developed by Chmielewska-Łuczak (2013). It includes an introductory section which gathers basic information about the respondent, and the main part which comprises fifty-nine items describing the respondent's personal Internet experiences. The I-IRQ items form two larger scales[10]. The respondent's answers are given on a four-point scale (Strongly Agree, Agree, Disagree, Strongly Disagree) and are graded accordingly (three points for an answer that is entirely consistent with the key, 0 points for an answer that is wholly inconsistent, and intermediate points for partial consistency with the key).

An overview of the psychometric scale properties is shown in Table 1.

Table 1. *Characteristics of the I-IRQ (N=647) scales.*

Parameter	Scale of the open attitude	Scale of the overwhelmed attitude
Cronbach's alpha based on standardized items	**0.85**	**0.80**
No. of items	15	14
Mean	13.99	16.49
Standard deviation	8.09	7.28
Potential range	0-45	0-42
Observed range	0-37	0-38
Skewness	0.28	-0.01
Kurtosis	-0.55	-0.35
Mean inter-item correlation	0.27	0.23
Range of discriminant function coefficients	0.40-0.59	0.31-0.49

As is demonstrated in Table 1, both scales have almost normal distributions and solid reliability coefficients[11]. Their significance has been explained above.

World-I Questionnaire (W-IQ)

The World-I Questionnaire was developed by Senejko and Łoś (2011). The items were based on fourteen globalization domains that were singled out for our study (e.g. political, financial and banking, industrial, consumer, ecological, cultural, civic). The respondents' answers were provided on a four-point scale (Strongly agree, Agree, Disagree, Strongly disagree). At present, the W-IQ consists of three weakly correlated scales (with-

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[10] An exploratory factor analysis of data reveals that more than two factors could be distinguished. Nevertheless, given the limitation of our paper, only the first two factors were taken into account.

[11] It must be noted that in the present sample, the scales are positively correlated (Pearson's correlation coefficient r=0.36), even though a varimax orthogonal rotation was used in the process of the factor analysis of items, and items with high weights in both factors were deleted from the scales.

in the range -0.08 - 0.25 for this data sample). The present research used a 35-item questionnaire version that measured three attitudes toward globalization (accepting, critical, fearful)[12]. An overview of the psychometric properties is shown in Table 2.

Table 2. *Characteristics of the W-IQ (N=647) scales.*

Parameter	Scale G–accepting	Scale G–critical	Scale G–fearful
Cronbach's alpha based on standardized items	**0.70**	**0.73**	**0.68**
No. of items	9	10	11
Mean	15.23	18.72	12.65
Standard deviation	5.06	5.29	5.15
Potential range	0-27	0-30	0-33
Observed range	0-27	0-30	0-28
Skewness	-0.21	-0.33	0.09
Kurtosis	-0.27	0.33	-0.20
Mean inter-item correlation	0.21	0.22	0.16
Range of discriminant function coefficients	0.22-0.54	0.31-0.47	0.25-0.45

The scales' relatively low reliability coefficients (within the range 0.68 - 0.73) result from the questionnaire scales' intended wide content variety (as many as fourteen globalization domains). On a different sample (constructive, N=806), the reliability coefficients of those three scales were slightly higher (within the range 0.73 - 0.79). This level of internal consistency appeared sufficient for our research.

Procedure
Respondents
The respondents were 597 people aged fifteen to thirty-nine living in Lower Silesia, Poland. They were school pupils, students and employed persons. The research was conducted between January and March 2013, in groups (school pupils) and individually (students and employed persons), in places where the respondents studied, worked or lived.

Results
Analysis of the research results
The results are presented in the order corresponding to that in which the research questions and hypotheses have been given above.

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[12] The wording of the items was intended to encourage the respondents to talk about their personal attitudes, opinions or behavior even if the item concerned macrosocial phenomena, such as "fleeing" jobs or the loss of social control over international corporations.

Respondents' characteristics in relation to age, length of Internet experience, attitude toward using the Internet and attitude toward globalization

The study results (see Table 3) show that, with respect to Internet experience, both the younger (aged 15–19) and the older (aged 20–39) respondents having more than five years' experience are more often characterized by low levels of open attitude toward using the Internet ($p < 0.0001$ for the older respondents). Conversely, among respondents with less than five years' experience, significantly higher percentages of both younger and older respondents are characterized by high open attitude levels toward using the Internet ($p < 0.01$).

Table 3. *Age, length of Internet experience and attitude toward using the Internet.*

| Age | Length of Internet experience | Attitude toward using the Internet | | | | Total |
| | | Open | | Overwhelmed | | |
		Low	High	Low	High	
Younger (aged 15–19)	Over 5 years	116	115	131	100	231
		50.22%	49.78%	**56.71%**	43.29%	
	Less than 5 years	23	37	26	34	60
		38.33%	**61.67%**	43.33%	56.67%	
Older (aged 20–39)	Over 5 years	162	88	134	116	250
		64.80%	35.20%	53.60%	46.40%	
	Less than 5 years	10	46	11	45	56
		17.86%	**82.14%**	19.64%	**80.36%**	
Total		311	286	302	295	597

As regards the overwhelmed attitude, higher percentages for both the younger and the older respondents having over five years' Internet experience are characterized by a low attitude level ($p < 0.003$ for the younger respondents; $p < 0.06$ – for the older group). In contrast, both the younger and the older respondents with less than five years' Internet experience are characterized by a high level of this attitude ($p < 0.0001$ for the older respondents). Therefore, longer Internet experience is related to low levels for both open attitude and overwhelmed attitude, whereas shorter Internet experience shows high levels for both. Respondent age was not a significant predictor of attitude.

The findings concerning Internet style usage must be preceded briefly by how they were acquired. Since the I-IRQ comprises two scales (the open attitude and the overwhelmed attitude toward using the Internet), categorizing them involved converting their results to those greater than zero ("high") and those less than zero ("low"). This made it possible to identify four Internet usage styles. These were: the distanced style (low open, low over-

whelmed), the frustrated style (low open, high overwhelmed), the omnipotent style (high open, low overwhelmed), and the ambivalent style (high open, high overwhelmed).

Table 4 shows that irrespective of age, among the respondents having the longer Internet experience,[13] those exhibiting the distanced style are in the majority (in a pair-wise comparison, the majority of differences are highly significant statistically).

Table 4. *Age, length of Internet experience and Internet usage styles.*

Age	Length of Internet experience	Internet usage styles				Total
		Distanced	Frustrated	Omnipotent	Ambivalent	
Younger (aged 15–19)	Over 5 years	76	40	55	60	231
		32.90%	17.32%	23.81%	25.97%	
	Less than 5 years	10	13	16	21	60
		16.67%	21.67%	26.67%	35.00%	
Older (aged 20-39)	Over 5 years	96	66	38	50	250
		38.40%	**26.40%**	15.20%	20.00%	
	Less than 5 years	5	5	6	40	56
		8.93%	8.93%	10.71%	**71.43%**	
Total		187	124	115	171	597

Among the respondents having shorter Internet experience, regardless of age, the majority exhibited the ambivalent style. In the older group, the ambivalent style levels are significantly higher than for any of the other three styles, whereas in the younger group, the ambivalent style is significantly more frequent than the distanced style. Therefore, the length of Internet experience is again a more significant predictor the respondents' age.

Furthermore, certain regularities can also be observed with respect to the respondents' attitudes toward globalization. While the accepting attitude toward globalization is most prominent (at a level ranging from $p < 0.08$ to $p < 0.01$) among the younger respondents having over five years' experience, the older respondents with the longer Internet experience are mostly characterized by a critical attitude (at a level ranging from $p < 0.03$ to $p < 0.0001$).

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[13] Among the respondents with more than five years' Internet experience, 85% use the Internet several times a day, while the remaining 10% use the Internet once a day. Hence, almost all of them use the Internet systematically.

Table 5. *Age, length of Internet experience and attitudes toward globalization.*

Age	Length of Internet experience	Attitudes toward globalization			Total
		Accepting	Critical	Fearful	
Younger (aged 15–19)	Over 5 years	92	65	74	231
		39.83%	28.14%	32.03%	
	Less than 5 years	22	14	24	60
		36.67%	23.33%	40.00%	
Older (aged 20-39)	Over 5 years	84	107	59	250
		33.60%	**42.80%**	23.60%	
	Less than 5 years	13	6	37	56
		23.21%	10.71%	**66.07%**	
Total		211	192	194	597

In contrast, both the younger and the older respondents having less than five years' Internet experience are predominantly characterized by a fearful attitude toward globalization (in pairwise comparison, the majority of differences were highly statistically significant).

Styles of Internet use and attitudes toward globalization

No other research results were available to our study that would enable a meaningful comparison, but certain relations between Internet usage styles and attitudes toward globalization were assumed to exist, given the psychological content of those categories and the the respondents' developmental characteristics (adolescents and young adults).

The results shown in Table 6 indicate that the accepting attitude is mostly exhibited by respondents characterized by distanced and omnipotent styles (in pairwise comparison, the differences vary from $p<0.05$ to $p<0.0001$); the critical attitude is mostly exhibited by respondents characterized by the frustrated style ($p< 0.01$ to 0.001), whereas the fearful attitude characterizes those exhibiting the ambivalent style ($p< 0.001$ to 0.0003).

Table 6. *Internet usage styles and attitudes toward globalization.*

Categories	Accepting attitude	Critical attitude	Fearful attitude	Total
Distanced style	89	59	39	187
	47.59%	31.59%	20.86%	
Frustrated style	35	61	28	124
	28.23%	**49.19%**	22.58%	
Omnipotent style	50	29	36	115
	43.48%	25.22%	31.30%	
Ambivalent style	37	43	91	171
	21.64%	25.15%	**53.22%**	
Total	211	192	194	597

Furthermore, to obtain a full view of the findings, we also assessed whether statistically significant correlations existed between the four Internet usage styles and the scales of attitudes toward globalization.[14] The results are presented in Table 7.

Table 7: *Spearman's correlations between Internet usage styles and attitudes toward globalization.*

N=597	Accepting attitude	Critical attitude	Fearful attitude
Distanced style	0.00	-0.07	**-0.28**
Frustrated style	-0.06	**0.19**	0.02
Omnipotent style	0.05	**-0.09**	**-0.13**
Ambivalent style	0.01	-0.01	**0.38**

Statistically significant correlations are written in bold ($p < 0.05$).

Table 7 shows significant correlations between Internet use styles and two of the three attitudes toward globalization scales: the critical attitude and the fearful attitude. These correlations are consistent with those obtained in the idiographic analysis (cf. Table 6). Conversely, no significant correlations with Internet usage styles were obtained for the accepting attitude, even though such significant relations were obtained in the idiographic analysis, which took into account the results categorized individually for each respondent. These correlations are shown in Figure 1 – the analysis of variance results of the attitude scales to globalization in the Internet usage subgroups.

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[14] The three-factor solution was accepted based on factor analysis (principal components analysis with varimax rotation). It was assumed that even if it was complex, the respondents' attitude toward globalization was primarily categorized by the strongest of the three components – accepting, critical or fearful (the idea was borrowed from Berzonsky, 2012, who classifies identity styles in this way). This analysis was performed through the standardization of raw scores in the W-IQ scales, which revealed the highest result for each respondent, constituting his or her category of attitude toward globalization.

Table 8. *Analysis of variance of the W-IQ scales in the Internet usage style subgroups (df effect = 3, df error = 593).*

Scales of attitudes toward globalization	F	p<
Accepting scale	0.82	0.48
Critical scale	7.79	0.00004
Fearful scale	38.23	0.000001

As it turned out, the acceptance scale results among Internet usage styles was not statistically significant. This is illustrated in Figure 1 (green line).
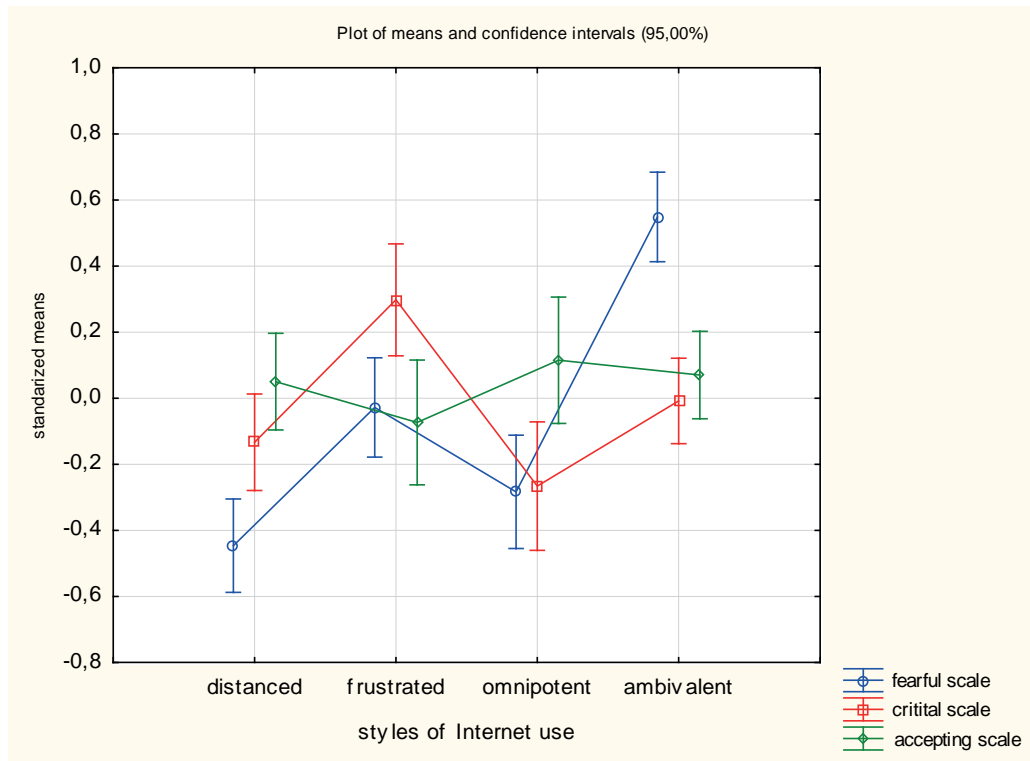
Figure 1: Means of three attitudes toward globalization and four Internet usage styles.

Discussion

According to the literature on the subject, no previous research using idiographic analysis has been conducted on relationships between Internet use and attitudes toward globalization. The results thus achieved are more interesting and produce greater insight into the essence of the relations than would be possible if the classic quantitative analysis had been used. Taking into account the developmental characteristics of people under

examination – adolescents and young adults – it was expected that the respondent's age would constitute an important variable that should be included in the study (Bee, 2000; Newman, B.M. & Newman, P.R., 2006; Oleszkowicz & Senejko,2013). Another variable which was deemed important to the present study was Internet experience, often regarded (Kraut, Kiesler, Boneva, Cummings, Helgeson, & Crawford, 2002; Sum, Mattews, Pourghasem, & Hughes, 2009) as crucial to the mental state of Internet users.

Indeed, our research results indicate that in some cases respondent age significantly modifies the acquired data, while Internet experience – or both variables – would appear to be crucially important in others. Based on psychological knowledge about human development, Hypothesis no. 1 assumed that, regardless of age and Internet experience, a majority of respondents would be characterized by openness to experiences, as expressed in an accepting attitude toward globalization and an open attitude toward Internet use. However, our results do not confirm this hypothesis: it turns out that longer Internet experience may decrease openness toward the Internet irrespective of the respondent's age. Such openness is observed only in respondents, both younger (nineteen years of age and under) and older (thirty-nine years of age and under), who have less than five years' experience in using the Internet. The results, paradoxical in light of developmental psychology and other research (Kraut et al., 2002),[15] are in accordance with psychological analysis of Internet users indicating that the Internet environment is psychologically difficult and exposes Internet users to various frustrations (Aboujaoude, 2011; Turkle, 2011; Suler, 2004a, b). It is worth mentioning at this point the interesting results concerning the overwhelmed attitude level toward the Internet that characterizes younger and older respondents alike. As it turns out, respondents with longer Internet experience often have a low level of overwhelmed attitude, while those with shorter Internet experience feel more overwhelmed. Arguably, the results may be interpreted within the strategic categories adopted by experienced Internet users, involving controlled limitation of openness to online information, and contacts or emotions related to experience in using the Internet. It allows experienced users to avoid feeling overwhelmed by the Internet (cf. Young, 1998)[16].

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[15] Robert Kraut and his colleagues carried out in the 1990s an experiment known as the "Home Net Study", in which a number of families, which had no previous experience in using the Internet, were provided with computers and unlimited access to the Web. The results of two years' observations of the changes in the families' functioning, well-being and emotions show that the new Internet users felt much more lonely and frustrated. However, observations that were made after an additional period of three years revealed that virtually all of the negative emotions diminished. The researchers also observed a positive correlation between frequent Internet use and social commitment and mental equilibrium (Kraut et al., 2002).

[16] These findings appear particularly interesting when juxtaposed with the notion of Internet addiction. Our study suggests that experienced Internet users may individually develop strategies for regulating their commitment to the Internet.

Both the respondents' age and Internet experience prove significant with respect to their attitudes toward globalization. Among the younger respondents, longer Internet experience is related to the accepting attitude toward globalized reality, whereas in the older respondents, longer Internet experience is related to the critical attitude. Conversely, respondents with less than five years' experience tend to exhibit a fearful attitude toward globalization. This may be attributable to numerous factors. It may be supposed that older respondents with at least five years' Internet experience may be influence by sociopolitical phenomena related to political transformation and global interdependencies, such as recession, unemployment, professional qualifications becoming outdated, and unfavorable forms of employment. They experience these phenomena directly, trying to remain in work in an unstable labor market or making decisions about starting a family and securing its future at a decent level, and so on. In contrast, younger respondents with longer Internet experience are susceptible to ideological acceptances and a wealth of opportunities related to the ubiquitous globalization. Undeniably, the Internet enables groups excluded from social discourse to contact each other and become involved in social organizations (Rybarczyk, 2005; Rudnicka, 2005; Hołda, 2008; Sahaj, 2013). Despite this, however, there is still a real threat that, in line with the rich-gets-richer principle, the Web may offer opportunities while remaining yet another hotbed of growing social stratification (Weiser, 2001, after Barani, 2009).

It may be suggested that the less experienced Internet users, both younger and older, are worried by their insufficient competence and potential informational exclusion (Chmielewska-Łuczak & Nowak, 2007). It appears necessary to conduct intercultural studies concerning this issue. Certain attitudes toward globalization and Internet usage styles reflect the marginalization fears experienced by some members of society. Observations made over several years have confirmed that there are indeed "winners" and "losers" in globalization, as Marek Sokołowski remarked over ten years ago in the context of education and media (Sokołowski, 2003). Already a decade ago, he argued that only a broadly educated society – one that was competent and able to participate in ongoing processes (including participation via the Internet), and that was rooted in its own culture but remained open and willing to meet other cultures – would be able to take full advantage of the opportunities offered by globalization, but would also be able to counter the new threats it posed. A society of knowledge is a partner to economic globalization and the information revolution, offering its members access to knowledge and constant actualization of the knowledge in the form of lifelong learning (Sokołowski, 2003).

The most important results regarding Internet usage styles (based on two attitude types) show that the majority of respondents with at least five years' Internet experience, regardless their age, are characterized by the distanced style (low open and low over-

whelmed attitudes). In contrast, among the respondents with less than five years' experience, irrespective of their age, the majority are characterized by the ambivalent style (high open and high overwhelmed attitudes). The results suggest a dynamic transformation of attitudes toward the Internet conditioned by online experiences (cf. Turkle, 2011). The initial stages in exploring Internet possibilities may be intense, unlimited and lack conscious control, leading, as a result, to positive but also many negative experiences and events. In consequence, the inexperienced users may feel overwhelmed and trapped by the Internet. Gradually, they tend to increase self-control and reduce the intake of information as well as their own participation in online activities.

Furthermore, we observed a relationship between the distanced and omnipotent styles and acceptance of globalization. To reiterate, both styles are characterized by low overwhelmed attitude, a fact which may be related to self-efficacy, controlling the situation as well as identifying and understanding the principles governing the Internet environment (Yan, 2006). It is possible that these competences predispose users to fully utilize the opportunities offered by both globalization and the Internet.

 A relationship between the frustrated style (overwhelmed attitude and no openness to the Internet) and the critical attitude toward globalization may be partly explained by "digital exclusion"[17]. Moreover, a mass of negative emotions arising from experienced failures may incline people to generally criticize globalized reality.

Contrary to techno-optimists, claims Ellul (1962, after Podgórski, 2013), technological development creates more problems than it can solve. Here the social and human sciences may play a role – to identify both the positive and negative aspects of technological innovation impacting on interpersonal relations and human problems (Ledzińska, 2009). The observations made while investigating the critical attitudes toward globalization could serve to determine how the media society, where the dominant social contacts constitute those executed through the media, can overcome the paradox of mediatization: how to regain control over the media, socially and individually (Podgórski, 2013; Laskowski, 2013).

The ambivalent style (high openness and high overwhelmed attitudes toward the Internet) and a fearful attitude toward globalization appear to result from an unskillfully set balance between the user's own inclinations and provocative online advertising campaigns[18]. As a possible result, the uncertainty that people experience becomes generalized to fears concerning the globalized socio-cultural environment that do not have their source in Internet activity. The observed relations are consistent with Hypothesis no. 3 in

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[17] For the our purposes, "digital exclusion" is understood not only as no Internet access or limited technical skills, but also encompasses various limitations with respect to the self-efficacy competences, controlling the situation as well as identifying and understanding the principles governing the Internet environment.

[18] For example, the YouTube advertising campaign.

that it is possible to indicate a relatively explicit relationship between Internet usage styles and attitudes toward globalization.

Based on idiographic analysis, our study considered individual configurations of Internet usage style and attitudes toward globalization. Several interesting relationships transpire that are important from psychological, socio-political and technological perspectives. As has been emphasized throughout, these relations would probably have escaped the researchers' attention if the study had been based only on a typical quantitative analysis. Our present study may be utilized by Internet users to make them aware of the opportunities and threats presented by the Internet, but also, more importantly, to increase their awareness for finding strategies to cope with the challenges posed by the Internet that best suit the needs of individual users.

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Appendix

Selected items of Open and Overwhelmed Scales (I-IRQ)

Open Scale

29. I have more Internet friends than the ones I stay in touch with in other ways (phone, snail mail, direct meetings).

33. I prefer contacting people online.

61. I have made more good friends since I started using the Internet.

Overwhelmed Scale

30. I am constantly flooded with information from the Web.

41. I am tired of constantly having to answer my friends' emails.

49. People on the Net make me irritated.

Selected items of Fearful, Critical and Accepting Scales (W-IQ)

Fearful Attitude Scale

9. I feel that a great number of inventions and discoveries do more harm than good.

23. I can see so many different possibilities in the contemporary world that I do not exactly know which way I should choose.

31. I feel overwhelmed by the abundance of new pop music bands and styles.

Critical Attitude Scale

2. I would like the egoism of companies and countries that do whatever they want, ignoring ecological, health or financial problems they are causing, to be restricted.

28. I think it to be an unacceptable practice to make people redundant just because their company moves to another country.

32. I get angry to see that our country's problems are caused by decisions made by someone in a different part of the world.

Accepting Attitude Scale

8. I consider choosing quite a different place in the world to live in.

10. I keep on trying food (cuisines), cosmetics and medicines coming from distant, exotic countries.

25. To relax or see something interesting, I travel to distant places and to other countries.

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Relationships of self-efficacy beliefs to executive functions, hyperactivity-impulsivity and inattention in school-aged children

Abstract:

Executive function deficits, hyperactivity-impulsivity, and inattention can have a negative impact on a child's self-efficacy beliefs. Forty-eight children with high intensity ADHD symptoms and 56 children with low intensity symptoms in ages 8 to 10 years completed the Self-Efficacy Scale for Children and executive function tests. Rating Scales for Teachers and Parents were completed for each child to measure the ADHD symptoms. ADHD symptoms and executive function deficits were associated with lower self-efficacy beliefs especially in two spheres: academic achievement and self-control. Implications of these findings for child therapy are discussed.

Keywords:

self-efficacy beliefs, executive functions, inattention, hyperactivity-impulsivity

Streszczenie:

Niska sprawność funkcji wykonawczych, impulsywność-nadaktwność oraz nieuwaga oddziałują negatywnie na funkcjonowanie dziecka w różnych sferach życia i w związku z tym mogą mieć negatywny wpływ na rozwój przekonań o własnej skuteczności. 48 dzieci z wysokim nasileniem objawów ADHD oraz 56 dzieci z niskim nasileniem objawów w wieku 8-10 lat wzięło udział w badaniu Skalą Przekonań o Własnej Skuteczności oraz testami funkcji wykonawczych. Skale Obserwacji dla Nauczycieli oraz Rodziców zostały wypełnione dla każdego dziecka, aby ocenić nasilenie objawów ADHD. Objawy ADHD oraz deficyty funkcji wykonawczych były związane z niższymi przekonaniami o własnej skuteczności przede wszystkim w dwóch sferach: osiągnięć szkolnych oraz samokontroli. Zaprezentowane są wnioski z tych wyników dla terapii dzieci z ADHD.

Słowa kluczowe:

przekonania o własnej skuteczności, funkcje wykonawcze, nieuwaga, impulsywność-nadaktwność

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Introduction

Self-efficacy, the central construct of Bandura's (1997, 2001) social cognitive theory, refers to the perceived ability to produce a desired action. Self-efficacy beliefs play an important role in children's self-development, adaptation and change. Efficacy beliefs affect whether people think optimistically or pessimistically, how well they motivate themselves and persevere when facing difficulties (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001), the quality of their emotional well-being, and their vulnerability to stress and depression (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Muris, 2002), the amount of effort they invest, and the choices they make at crucial points in their life (Bandura, et al., 2001). They play a particularly important role in schoolchildren by influencing their aspirations, motivation levels, and academic accomplishments (Bandura, 1997, 2001). Self-efficacy beliefs are developed and strengthened through mastery experiences, social modeling, verbal persuasion, and in observing one's own physiological state. Self-control abilities play a crucial role in the developing self-efficacy beliefs (Zimmerman & Cleary, 2006). They influence the gaining of experiences from all the above-mentioned spheres: facilitating mastery experiences, learning from observing other people, and regulating arousal and emotion in stressful situations. Thus, we can assume that developing self-efficacy beliefs can be endangered in children with self-control difficulties, especially in children with poor executive functions and with high intensity inattention, hyperactivity and impulsivity. Tabassam and Grainger (2002) demonstrated that self-efficacy beliefs in academic achievement of children with learning disabilities (with and without co-morbid ADHD) are lower than in control children. Moreover, Major (2011) showed that girls with ADHD have lower self-efficacy beliefs in academic achievement in comparison with girls without ADHD and that self-efficacy beliefs in this sphere are related to symptoms of inattention and not hyperactivity-impulsivity. However, these two studies investigated self-efficacy beliefs in only one sphere of life: academic achievement. Moreover, we did not find studies in the literature concerning relationships between self-efficacy beliefs and executive functions. Our study aims to explore relationships of self-efficacy beliefs in four spheres: academic achievement, self-control, regulating negative emotions and managingf positive emotions in executing functions (inhibition, planning and working memory), and hyperactivity-impulsivity and inattention symptoms.

Method
Participants

The study included children, aged 8–10 years, drawn from 12 schools in Warsaw and four schools in the suburban areas surrounding Warsaw. In the first stage, 450 parents completed rating scales concerning hyperactivity-impulsivity and inattention symptoms. From this group, 48 children with high intensity hyperactivity-impulsivity and inattention

symptoms assessed by parents and teachers and 56 children with low intensity symptoms were chosen and participated in further in the study. The high intensity group included children whose scores in the hyperactivity-impulsivity and/or inattention subscales of the Rating Scales for Parents and Teachers were more than one standard deviation higher than the population mean. The second group comprised those whose scores on the hyperactivity-impulsivity and/or inattention subscales of the Rating Scales for Parents and Teachers were more than one standard deviation below the average for the population. One standard deviation cutoffs above the mean for results by other rating scales was shown to have good predictive value for diagnosing ADHD (Biederman, 1993; Geller, et al, 2004). Thus, we assumed that using this cutoff we would identify children with both clinical and subclinical intensity ADHD symptoms. Permission to conduct this investigation was provided by respective school principals, individual classroom teachers and the University of Warsaw Institutional Review Board. All parents gave their written, informed consent prior to their child's participation in the study. Descriptive statistics (age and gender) for the two groups are presented in Table 1.

Table 1. *Descriptive Statisitics.*

	Groups with high ADHD symptoms	Group with low ADHD symptoms
Females (n)	12	27
Males (n)	36	29
Age (in months)	108	107.5
Mothers with primary education	9.00%	3.00%
Mothers with vocational education	13.00%	10.00%
Mothers with secondary education	31.00%	28.00%
Mothers with higher education	40.00%	43.00%
Fathers with primary education	10.00%	3.00%
Fathers with vocational education	20.00%	18.00%
Mothers with secondary education	30.00%	36.00%
Mothers with higher education	40.00%	43.00%

Measures

Self-efficacy Scale for Children (SESC*;* Gambin & Święcicka, 2012) was constructed at the University of Warsaw and had four subscales: (1) self-efficacy for academic achievement (four items, α =73); (2) self-efficacy for self-control in social and school situation (seven items, α = 86); (3) self-efficacy for regulating negative emotion (five items, α = 86); and (4) self-efficacy for management of positive emotion (four items, α = 62; Table 1). The children were tested individually using the scale by the experimenter who read aloud all the items to the child and asked the child to rate how well he or she could do different things.

Each item is accompanied by a scale from 0 to 10 on which the child pointed to the answer. Adequate psychometric properties have been established for SESC.

The Rating Scales for Teachers and Parents (RST and RSP; Gambin & Swiecicka, 2009, 2012; Święcicka, Matuszewski & Woźniak, 2008) were constructed at the University of Warsaw. We applied an empirically-based, bottom-up approach (Achenbach, Dumenci & Rescorla, 2003) to their construction, in which the researcher did not make any initial assumptions concerning the existence of certain diagnostic categories. Therefore, the initial items included in the scales came not from a diagnostic manual but from actual comments by teachers and parents who were describing the behavior of their children as they displayed hyperactivity-impulsivity and inattention symptoms.

The RST includes 22 items and consists of four subscales that were extracted through factor analysis. The hyperactivity-impulsivity subscale (eight items, $\alpha = .94$) measures impulsive and hyperactive intensity. Two more subscales concern the intensity of two inattention dimensions. The attention withdrawalsubscale (seven items, $\alpha = 0.94$) assesses the tendency to withdraw attention and carelessness. The distractibility-fatigability subscale (10 items, $\alpha = 0.90$) measures the tendency to be easily distracted and tire quickly from mental activities. The low emotional control subscale (four items, $\alpha = 0.91$) assesses the tendency toward uncontrolled emotional outbursts.

The RSP includes 22 items comprising two subscales extracted through factor analysis. The hyperactivity-impulsivity subscale (11 items, $\alpha = .90$) measures impulsive intensity, hyperactive behaviors and low emotional control. The inattention subscale (11 items, $\alpha = .92$) assesses the child's tendency to become easily distracted, to tire quickly from mental activities, to withdraw attention, and to be careless. Parents and teacher are asked to rate on a four-degree scale the extent to which the behavior described in the item matches the child's behavior.

Stop signal task

The computerized stop signal task (Logan, 1994; Logan & Cowan, 1984) measures executive inhibitory control that was developed based on Logan's 'race model' of inhibition (1994). On primary task trials, the letters X or O are presented with the instruction to press a corresponding key as quickly as possible, creating a prepotent tendency to respond in most trials. In a randomly selected 25% of the trials, a tone is presented that indicates that the participant should stop the response. The stop signal task applied in our current study utilizes a tracking procedure in which the delay between the the visual stimulus and the onset of the stop signal changes after every trial with a stop signal. It allows participants to successfully inhibit their responses to the signal in roughly 50% of the stop signal trials during the experiment. This was necessary in order to estimate the stop signal reaction time (SSRT) by subtracting the stop-signal delay from the mean go-signal reaction time.

Longer SSRT scores indicated deficits in inhibition. All participants in our study were asked to individually complete the stop signal task.

Tower of Hanoi

The procedure used in this study was based on that developed by Borys, Spitz and Dorans (1982) and described by Bishop, Aamodt-Lepper, Creswell, McGurk and Skus (2001). The apparatus consisted of a board containing three upright rods and four discs of varying sizes. One apparatus was designed for the participant. The second apparatus arranges the discs according to a model , which the participant must duplicate using a minimum number of moves while obeying the following rules: (1) only one disc may be moved at a time; (2) a larger disc must not be placed on top of a smaller one; (3) discs may not be placed on the table. The participant was given problems of increasing complexity, starting with 3-move problems and increasing up to 9-move problems, until the participant failed two consecutive problems. There were two problems for each number of moves. To be credited as having passed a given problem, the child had to solve it once in the minimum number of moves. The child's final score was the highest level they successfully completed in terms of move numbers, with an additional half point added if both tasks at this level were completed.

The Digit Span Backward subtest from the Wechsler Intelligence Scale for Children (Wechsler, 1991) was used to measure working memory abilities.

Results
Categorical Analysis
T-test for independent samples indicated significant differences between the two groups in self-efficacy beliefs: the group with ADHD symptoms had significantly lower self-efficacy beliefs in self-control, academic achievement and regulation of negative emotions in comparison to the group without ADHD symptoms. No significant differences in self-efficacy beliefs in managing positive emotions were revealed (Table 2).

Table 2. *Comparison of groups – T-test.*

	Groups with high ADHD symptoms	Group with low ADHD symptoms		
	M(SD)	M(SD)	t	p
Self-efficacy – academic achievement	27.95 (8.92)	34.16(4.93)	4.29	<.001
Self-efficacy – self-control	56.22 (10.02)	67.92(14.70)	4.66	<.001
Self-efficacy – regulation of negative emotion	35.17 (11.91)	39.68 (6.95)	2.31	.023
Self-efficacy – management of positive emotion	35.83(5.61)	36.98 (4.12)	1.17	.244
Inhibition	444.58	329.70	-5.18	<.001
Planning	5.49	6.13	2.03	0.04
Working memory	3.62	4.87	4.28	<.001

Dimensional Analysis

Spearman correlations were used to examine the relationship between self-efficacy beliefs, ADHD symptoms and executive functions (Table 3).

Table 3. *Correaltions between self-efficacy beliefs, ADHD symptoms and executive functions.*

	Self-efficacy – academic achievement	Self-efficacy – self-control	Self-efficacy – regulation of negative emotion	Self-efficacy – management of positive emotion
Hyperactivity-Impulsivity (M)	-.23*	-.37**	-.13	-.04
Inattention (M)	-.49**	-.38**	-.15	-.11
Hyperactivity-Impulsivity (T)	-.21*	-.35**	-.01	-.02
Distractibility-fatiguabilityy (T)	-.47**	-.35**	-.14	-.15
Withdrawal of attention (T)	-.37**	-.30**	-.07	-.11
Low emotional control (T)	-.11	-.26*	.02	.05
Inhibition	-.32**	-.28**	-.11	-.23*
Planning	.19*	.21*	.02	-.03
Working Memory	.36**	.14	.12	.10

Note. T – teacher, P – M - mother.

We found negative hyperactivity-impulsivity correlations with inattention to self-efficacy beliefs in self-control and academic achievement, and low emotional control to self-efficacy beliefs in self-control. Moreover, self-efficacy in academic achievement is associated with higher efficiency in all executive functions; and self-efficacy in self-

control is correlated with two executive functions: inhibition and planning. Significant correlations between inhibition and self-efficacy beliefs in managing positive emotions were revealed. Self-efficacy in manageing positive emotions is not associated with other executive functions and ADHD symptoms. Self-efficacy in regulating negative emotions is not correlated with any of these variables.

Stepwise linear regression was used to predict self-efficacy beliefs in academic achievement and self-control with ADHD symptoms and executive functions. Variables that significantly correlated with self-efficacy beliefs were included in the regression model. Symptoms of inattention reported by parents were the best predictors of self-efficacy beliefs in academic achievement (t =23.39, p <.001, R = .26) and self-control (t =22.7, p <.001, R =.17).

Discussion

This study demonstrates that high level self-efficacy beliefs in academic achievement and self-control are associated with lower ADHD symptoms. Children with high intensity ADHD symptoms are characterized by lower self-efficacy beliefs in these spheres in comparison to their peers. These results are consistent with previous findings on self-efficacy in academic achievement of children with ADHD (Tabassam and Grainger, 2002; Major, 2011). We can assume that children with ADHD symptoms experience difficulties in key factors that take part in building and strengthening self-efficacy beliefs. They experience less often than their peers mastery experiences in learning, controlling their own behaviour and dealing with parental and teacher expectations . They receive more negative feedback concerning their behaviour, skills and achievement from other significant people: teachers, parents and peers. Finally, they may experience difficulties in concentration on learning from observing other people. On the other hand, basing on social cognitive theory (Bandura, 1997, 2001) we can assume that low self-efficacy beliefs have an inverse negative impact on these spheres.

Moreover, this study shows that self-efficacy beliefs are associated with efficiency of executive functions; however, patterns of relationships differ depending on certain executive functions and areas of self-efficacy. Working memory, which is particularly essential for experiencing mastery experiences in learning (Gathercole & Alloway, 2006), is associated with self-efficacy in academic achievement. Planning, which plays an important role in both learning and controlling one's own behaviour (McCormack & Atance, 2011), is associated with self-efficacy in academic achievement and self-control. Inhibition is related to self-efficacy in academic achievement, self-control and management of positive emotions, and these relationships are stronger and more significant than with

planning. Since according to Barkley's theory, inhibition is the most crucial executive function, then poor abilities to stop one's own behaviours and impulses can affect various spheres. Thus, children characterized by poor inhibition can experience less mastery experiences in learning, in controlling their own behaviour, and in emotion regulation.

The best predictor of self-efficacy beliefs in academic achievement and self-control is inattention observed by parents. Since inattention is strongly associated with various self-control difficulties (especially executive and cognitive deficits) (Chhabildas et al., 2001; Gambin & Święcicka, 2009), high intensity of these symptoms may have a negative impact on developing strong self-efficacy beliefs. Interestingly, the best predictor of self-efficacy in these areas is inattention reported by parents, not by teachers. We can assume that both parents and teachers who perceive children as inattentive give them negative feedback on their behavior and learning abilities. However, parents, who are usually the most significant persons for a child, may have an essential influence on his/ her self-efficacy.

Moreover, this study reveals that children with high intensity ADHD symptoms display lower self-efficacy beliefs in regulating negative emotion in comparison to the group with low intensity symptoms. However, correlations of self-efficacy beliefs in this sphereto ADHD symptoms and executive functions are not significant. Moreover, children with high and low intensity ADHD symptoms did not differ in self-efficacy in managing positive emotions. Self-efficacy in this sphere is associated with only one of the included in this study variables concerning self-control: inhibition. We can assume that factors other than self-control play more important roles in developing of self-efficacy in regulating negative emotions and managing positive emotions such as relationship characteristics with other significant people, especially the attachment pattern characteristic (Sroufe, 2005).

Our study has some important limitations. It is limited by small numbers and thus replication in a larger sample is required before firm conclusions can be drawn. The children included in this study were selected to participate based on the Rating Scales for Parents and Teachers, not on psychiatric diagnoses.

These results have important implications for research on therapy and educational methods for children with ADHD. The greatest emphasis is placed on modified undesired behaviours and appropriate enforcement behaviours in therapy for these children (Chronis, Jones & Raggi, 2006). Little attention is paid to developing personality and social cognitions (such as self-efficacy beliefs, self-esteem, mentalizing abilities) for this group. More research on therapeutic and educational approaches enhancing self-efficacy beliefs and developing other social cognition aspects of this group of children is needed.

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The Polish Adaptation of FACES IV-SOR

Abstract:

My paper describes a Polish adaptation of the family assessment tool called FACES IV. Confirmatory factor analysis showed a good fit of the model to the data with a sample of 499 Polish individuals from 150 families. The reliability measures of the two Balanced scales are similar to those of the American scales. However, the four Unbalanced scales have lower reliability. Reliability measures of Family Satisfaction and Family Communication are even higher than the American ones. A cluster analysis clearly depicted the extreme profiles of the Balanced and Unbalanced scales, with the remaining four profiles also present. Norms were developed for the various scales. Psychometric verification of this instrument showed that FACES IV-SOR is useful for research and clinical work with Polish families.

Keywords:

Circumplex Model, FACES IV, Polish adaptation, alcoholic families

Streszczenie:

Artykuł przedstawia polską adaptację FACES IV, narzędzia do badania rodziny. Konfirmacyjna analiza czynnikowa wykazała dobre dopasowanie modelu do danych na próbie 499 badanych ze 150 rodzin. Wskaźniki rzetelności dwóch skal zrównoważenia okazały się podobne do amerykańskich, czterech skal niezrównoważenia są na ogół nieco niższe. Wskaźniki rzetelności skal Zadowolenia z Życia Rodzinnego i Komunikacji Rodzinnej są nawet wyższe od amerykańskich. Analiza skupień wykazała wyraźnie profile skrajne: Zrównoważony i Niezrównoważony, a także wystąpiły pozostałe cztery. Opracowano normy dla wszystkich skal. Psychometryczna weryfikacja narzędzia okazała, że FACES IV-SOR jest przydatne do pracy badawczej i klinicznej z polskimi rodzinami.

Słowa kluczowe:

Model Kołowy, FACES IV, polska adaptacja, rodziny alkoholowe

Introduction

Few family theoretical models have been created that also provide a family assessment that can be used for empirical research and clinical work with families. One of most popular models is the Circumplex Model of Marital and Family Systems and the family assessment called FACES (Family Adaptability & Cohesion Evaluation Scales). This work has been done by David Olson and and his numerous collaborators during a span of 30 years (Olson, Sprenkle, & Russell, 1979; Olson, 2011).

For Polish readers, this model was made familiar by Mieczysław Radochoński (1987), analyzed in depth by Marek Zwoliński (1992), and used in studies conducted by Maria Braun-Gałkowska (1992), Andrzej Margasiński (1996, 2006, 2009, 2010), Elżbieta Kornacka-Skwara (2004), and others.

As Edward F. Kouneski (2000) summarizes, of the more than 1200 empirical studies conducted on the Circumplex Model with FACES I, II & III, all had some limitations. In 2003, a major revision was made called FACES IV (Olson and Gorall, 2003). This new version, FACES IV, represents a comprehensive family assessment which has high levels of reliability, validity and clinical utility (Olson, 2011).

Theoretical Framework

Since the first description as Circumplex Model of Marital & Family System in 1979 (Olson, Sprenkle & Russell, 1979), it has identified three main dimensions of family life: cohesion, flexibility and communication. A review of the family concept indicates that many researchers, both in parallel and independently from each other, point to diverse aspects of family life for which cohesion, flexibility, and communication are generalizable categories. The dimensions of cohesion, flexibility, and communication also are considered fundamental in therapeutic models such as Minuchin's structural therapy, Haley's strategic therapy, and in the communication therapy model (Satir, Bateson), as well as others (Olson, Russell and Sprenkle, 1989).

Cohesion, Flexibility and Communication

The three fundamental theoretical dimensions and hypotheses have not been changed in the revised Circumplex Model: cohesion, flexibility, and communication.

Cohesion is defined as an emotional bond between family members (Olson, 2011). Specific indicators of the cohesion level in a given family are: mutual emotional closeness of family members, psychological boundaries between them (closed or open), the presence of a coalition, time spent together, common interests and forms of relaxation, the size of a common circle of friends, and the degree to which other members are consulted in decision-making.

Five cohesion levels range from disengaged, to three balanced levels of cohesion, to enmeshment (see Figure 1). Some researchers and theorists claim that high cohesion and enmeshment are not the same thing and that enmeshment is incorrectly placed in the Circumplex Model as maximum cohesion (Barber & Buehler, 1996; Green & Werner, 1996; Werner, Green, Greenberg, Browne & McKenna, 2001). In response to this criticism, a new scale on "enmeshment" was developed for FACES IV.

The definition of flexibility in the Circumplex Model has changed over time. Since its formulation in 1979 and up until the 1990s, Olson used the term adaptability. Deciding to replace the term adaptability with flexibility, Olson and Gorall (2003) emphasized that it did not regard the potential, for family systems to change, but rather took into account the actual number of change that occurred in the systems. FACES IV was constructed to reflect this new definition. Flexibility is defined as both the quality of and degree to which changes take place in a family system regarding leadership, roles, mutual relationship rules, and stemming from negotiation among family members. The new definition emphasizes to a greater extent the number of changes in the family (Olson, 2011).

Five levels of flexibility – range from the lowest scale (rigidity) – to the highest scale (chaos). The three central levels are called balanced and reflect healthier functional levels as measured by a balanced flexibility scale (see Figure 1). The two unbalanced flexibility levels are rigidity (very low) and chaos (very high).
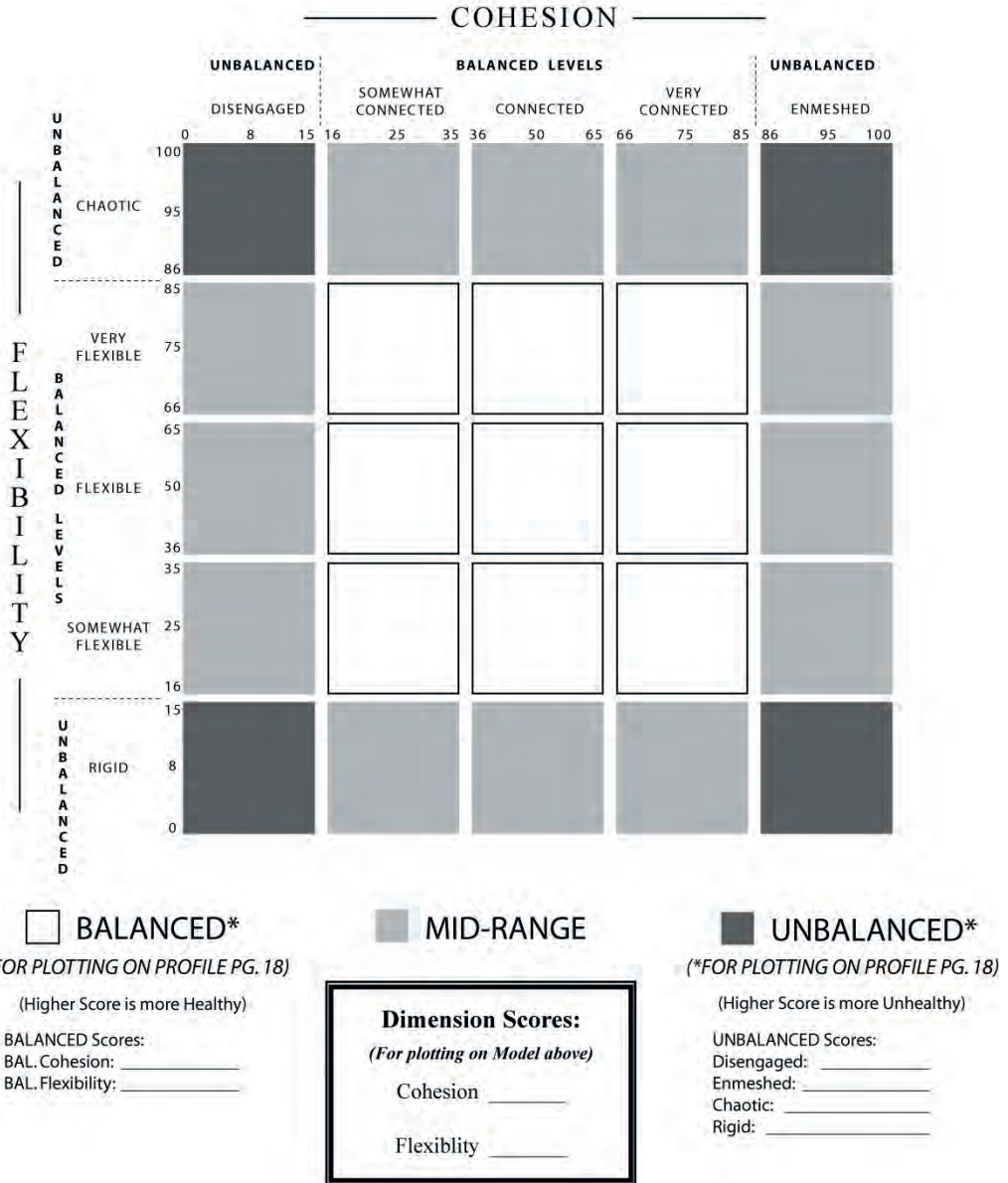
Figure 1: Circumplex Model & FACES IV (Olson, Gorall, Tiesel, 2006).

The five family cohesion levels and five flexibility levels create a model with 25 types. The nine central types are called Balanced because they represent the three balanced areas for both cohesion and flexibility. There are nine mid-range types where the family is balanced in one dimension and unbalanced in another dimension. Four types are unbalanced in both dimensions.

Two family dimensions are not represented in the Circumplex Model: family communication and family satisfaction (Olson, 2011). Family communication is considered a facilitating dimension in that it helps a family system to balance cohesion and flexibility. Family satisfaction measures how much each person likes the current family system.

To conclude, in FACES IV there are two balanced scales (balanced cohesion, balanced flexibility), four unbalanced scales (disengagement, enmeshment, rigidity, chaos) and a family communication and family satisfaction scale. Studies have shown good psychometric properties of FACES IV, both in respect to validity, reliability and clinical utility (Olson, 2011).

Hypotheses derived from the Circumplex Model:

The main hypothesis of the Circumplex Model is that "Balanced family systems are more healthy while Unbalanced families are less healthy". Several hundred studies have tested this hypothesis with various FACES versions (Kouneski, 2000). Balanced family systems also have better family communication and satisfaction compared to Unbalanced families.

The Polish Adaptation called FACES IV-SOR

The translation of FACES IV-SOR was carried out in collaboration with translators as well as a native English speaker working in Poland. Item content was evaluated by a group of competent judges – psychologists, and theorists working in research as well as practicing therapists. The Polish questionnaire was given the name ***FACES IV-Skale Oceny Rodziny (SOR- English: Family Rating Scales)*** to emphasize that the instrument serves to study the perception of families. As in the case with FACES IV the questionnaire consists of 62 items (see Appendix 1) that form eight FACES IV scales (Appendix 2). The remaining scales are formed from statements whose truthfulness in relation to the family is rated by the participant on a 5 - point scale (from "I completely agree – 1" to "I completely disagree – 5").

Sample

FACES IV-SOR was tested on a sample of 499 participants from 150 families, including 150 fathers, 150 mothers, 106 daughters, and 93 sons. The fathers' average age was 43.7 years, mothers' 42.4, daughters' 16.5, and sons' 17.9. Adults were within the 30 – 60 – year-old interval; specifically 33.3% were within 30-40, 52.5% 41-50, and 14.2% within the 51-60-year-old interval. Fathers' education was as follows: occupational (35%), secondary

school (49.7%), higher (15.3%). Mother's education was: occupational (31.8%), secondary school (51.1%), and higher education (17.1%).

Testing was conducted in southern and central Poland and included participants from large cities (41.2% of participants) and medium-sized cities (33.6%), as well as from villages (25.2%). Testing was carried out by trained individuals; participation in the study was voluntary and anonymous. In all families the parents were employed (in 18 families only the father worked), and the children attended school. During the interview no family reported a high level of family stress related to serious somatic diseases, psychological disorders or addictions.

Validity – Confirmatory Factor Analysis

Confirmatory Factor analysis was used to assess whether data from Polish families using FACES IV-SOR confirms the factorial structure of FACES IV. In the tested structural model, each of the six FACES IV-SOR scales were specified as latent endogenous variables, and the observed exogenous variable loadings were chosen according to the construction of the instrument. It was also assumed that the scales were inter-correlated.

Figure 2 displays the analytical confirmatory factor results of a hypothesized structure of 21 items belonging to the flexibility dimension. Figure 3 shows the results of the 21 items belonging to the cohesion dimension. Next to the arrows on the left, the variance of individual items is given, on the right - the factor loadings.
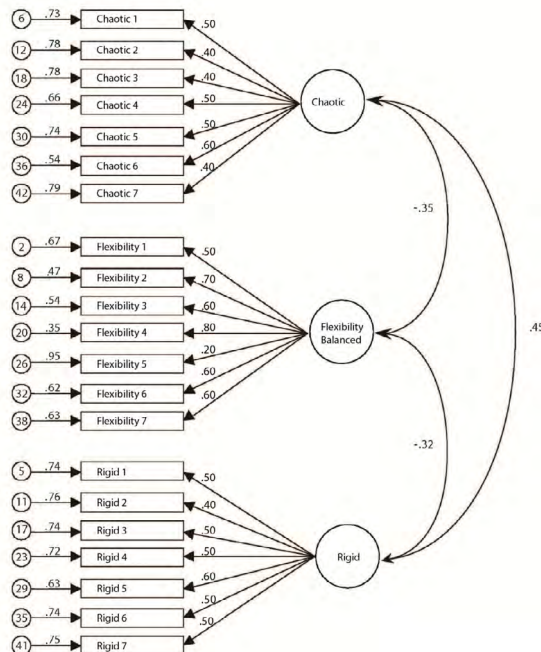
Figure 2: Confirmatory factor analysis for the flexibility dimension.
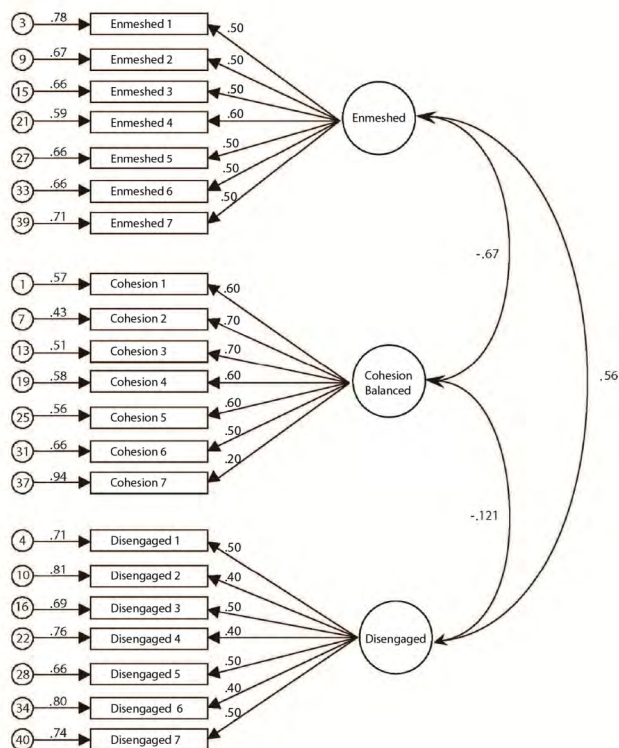
Figure 3: Confirmatory factor analysis for the cohesion dimension.

Table 1. *Values of model fit indices for given dimensions.*

Model Fit Index	Cohesion	Flexibility
RMSEA	.075	.082
Joreskop's GFI	.865	.841
Bollen's Delta	.787	.734
Population Gamma Index	[.88; .91]	[.85; .88]

The tested model's recreated factor loadings are almost all relatively high, considerably surpassing the amount number of standard errors, and are all statistically significant. Similar to the American studies, there were negative correlations among the Balanced and Unbalanced scales and positive correlations within the Unbalanced scale. It can be assumed that the acquired results confirm the main assumptions of the tested model. Despite the fact that factor loadings were low in entries 26 and 37, it was decided to keep them for the sake of symmetry with the original tool.

Table 1 shows the most important model - fit indices for the main variables. Even though the indice values differ somewhat from the ideal, the fit of the tested model to the Polish family sample data is sufficient and a change in the model is not necessary.

Reliability of FACES IV-SOR

Cronbach's alpha values for FACES IV-SOR are presented in Table 2. The values for the FACES IV scales are within .77 and .89 (Olson, 2011). Alpha reliability values for the FACES IV-SOR scales, computed for the normalized sample, are somewhat lower than the United States sample, but they are satisfactory (.70 and .93).

Table 2. *Alpha reliability of scales included in FACES IV-SOR as well as validating scale – Polish versus American data.*

	Cronbach's Alpha FACES IV (USA)	Cronbach's Alpha FACESIV-SOR (POLAND)
Unbalanced Scales:		
Disengagement	.87	.77
Enmeshment	.77	.70
Rigidity	.83	.73
Chaos	.85	.73
Balanced Scales:		
Balanced Cohesion	.89	.80
Balanced Flexibility	.80	.79
Validation Scales:		
Family Life Satisfaction	.80	.93
Family Communication	.88	.92

The highest alpha reliability for the Polish sample measures were for the Family Satisfaction and Family Communication scales (.93 and .92), which are higher than the United States sample. Both Balanced scale reliabilities were next highest (.79 and .80) and the lowest reliabilities were for the four unbalanced scales (.70 to .77). These reliabilities are all very acceptable for both research and clinical work with families. The FACES IV-SOR average result for the Family Communication Scale is M-39.5, standard deviation SD-6.8. The average score for Family Satisfaction is M-35.0, and the standard deviation is SD-7.04.

FACES IV-SOR Normalization

Table 3 shows the mean results of the six main FACES IV-SOR scales for groups of each family member (husbands, wives, daughters, and sons).

This data is illustrated in Figure 4. The higher scores on the two Balanced Scales, Balanced Cohesion and Balanced Flexibility, are markedly clear compared to the Unbalanced scales – this confirms the main assumptions of the Model. An analysis of variance

(ANOVA) was conducted to test if the groups differed significantly. The results indicate differences in cohesion between daughters and mothers ($p<.003$) and sons and mothers ($p<.034$), as well as differences in flexibility between daughters and wives ($p<.0003$) and daughters and husbands ($p<.024$).

Table 3. *Average scores of FACES IV-SOR scales for various family members.*

Scale	Husbands		Wives		Sons		Daughters		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD
Balanced Cohesion	28.57	4.69	29.25	4.43	27.95	4.52	27.48	5.06	28.43	4.70
Balanced Flexibility	24.65	5.24	25,.51	5.13	24.53	5.03	23.13	5.65	24.56	5.31
Disengagement	11.99	4.30	11.51	4.14	13.20	4.48	12.48	4.43	12.18	4.35
Enmeshment	13.99	4.48	13.95	4.56	14.60	5.01	13.71	4.24	14.03	4.55
Rigidity	16.59	4.75	16.56	4.86	16.97	5.02	17.16	4.84	16.77	4.84
Chaos	14.91	4.96	14.66	5.16	15.49	5.25	14.66	3.94	14.89	4.88
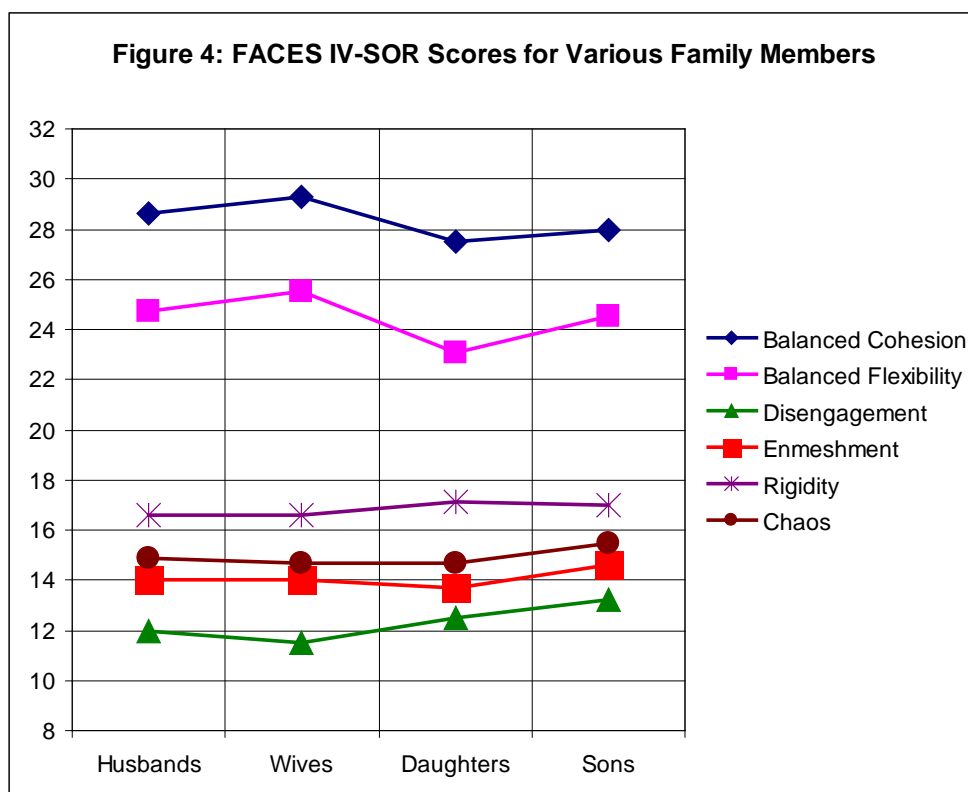
Figure 4: Average Scores for Various Family Members.

Percentile and sten norms were developed for each family member participant group: husbands, wives, sons, and daughters. FACES IV has only percentile norms. Sten

norms were developed for FACES IV-SOR because the results expressed in the sten scale are better suited for describing profiles and calculating compound ratios (cohesion ratio, flexibility ratio, total ratio). For the sten scale, the arithmetic mean is 5.5 and the standard deviation is 2. Results in the 4-7 sten range are thus included in the first standard deviation above and below the mean. Results in the 1-3 sten range are treated as low, 4-7 sten as average, and 8-10 as high. This scale has also proved to be useful in the modified illustration of the model.

The higher scores of the two Balanced scales, Cohesion and Flexibility, are markedly clear in comparison to the remaining four Unbalanced scales, confirming the Model's main assumptions.
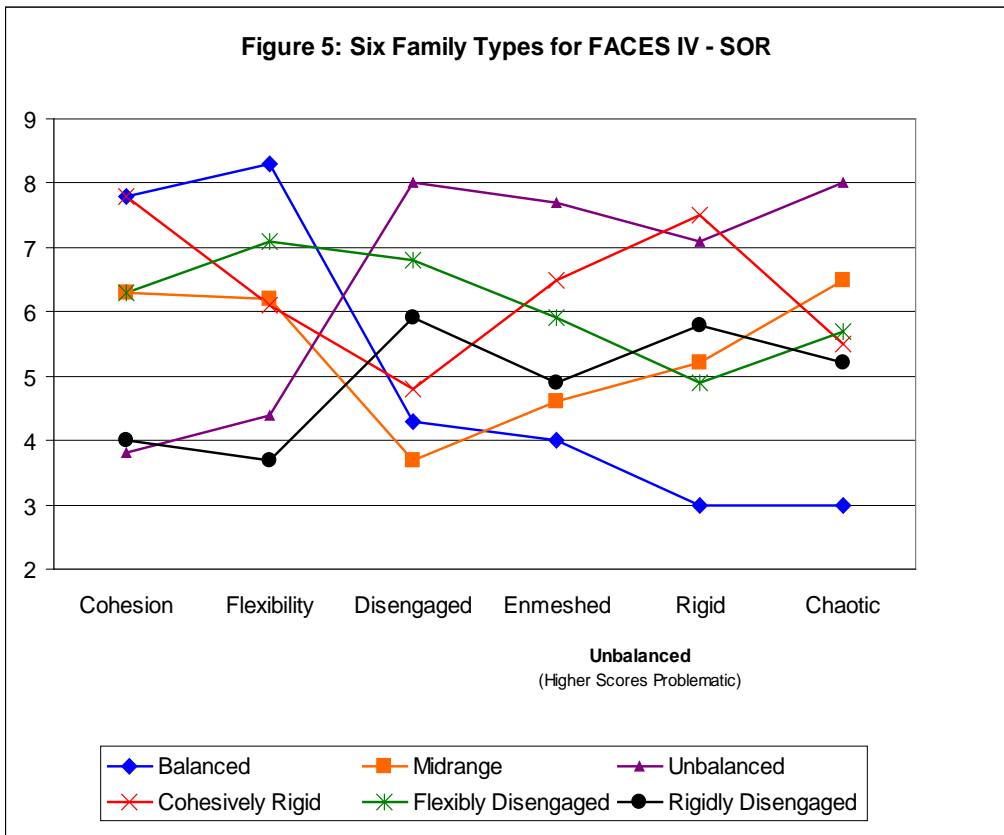
Figure 5: Average Scores for Various Family Members.

Six Family Types of FACES IV-SOR based on Cluster Analysis

Based on cluster analysis conducted on FACES IV-SOR, six types (profiles) of families were distinguished. These differ to some extent from those described by Gorall (2002). The resulting profiles are presented in Figure 3. The sten scale was used in their development.

Profile 1: Balanced – is characterized by the highest scores on the Balanced Cohesion and Balanced Flexibility scales and low scores on all the Unbalanced scales. The combination of high scores on the Balanced Scales and low scores on the Unbalanced scales suggests a family model characterized by high level healthy functioning and low level problematic functioning. These family types are depicted as being able to cope with daily stressors and emotional tensions.

Profile 2: Cohesively Rigid – is characterized by high scores on the Balanced Cohesion scale as well as high scores on the Rigidity scale, heightened scores on the Enmeshment scale, and average scores on the Chaos and Disengagement scale. This family type is characterized by a high level of emotional closeness as well as rigidity. Due to the high degree of closeness, it is assumed that such families generally function well. However, due to high rigidity, such family members may have difficulties in initiating situational or developmental changes.

Profile 3: Flexibly Disengaged – is characterized by high scores on the Balanced Flexibility scale and high scores on the Disengagement scale; the remaining scales have average scores. The relatively lowest score is on the Rigidity scale. Such an arrangement suggests that family members, if the necessity arises, can cope with problematic situations but on a daily basis take care of their own issues, living rather "individually" – with a prevalence of separate activities over common ones.

Profile 4: Midrange – is characterized by generally average scores on all scales, with the exception of the Disengagement Scale for which the scores are low. Scores for the Balanced Cohesion scale, somewhat higher than those on the Disengagement and Enmeshment scales, indicate emotional closeness of family members. This family type should generally function well, although scores on the Chaos scale suggest that in difficult situations the family may have trouble undertaking joint actions and choosing a leader, which is related to the overabundance of negotiation, lack of clear rules, and inconsequential and ineffective actions.

Profile 5: Rigidly Disengaged – is characterized by low scores on the Balanced scales and average scores on the remaining scales. Low scores on the Balanced Cohesion, and Balanced Flexibility scales indicate problematic families, although the intensity of these problems will be lower than in unbalanced families. Heightened scores on the Disengagement and Rigidity scales suggest that in difficult situations given family members may have an individual tendency to stiffen attitudes at the cost of family cohesion.

Profile 6: Unbalanced – is almost the exact opposite of a balanced family type. It is characterized by high scores on all four Unbalanced scales and low scores on the two Balanced scales. It is assumed that these types of families have the most difficulties, function most problematically – which is indicated by high scores on the Unbalanced

scales – and lack strong protective factors included in the Balanced scales. It's estimated that this type of family most often undergoes therapy.

There was considerable similarly between the Polish and the American typology in terms of the two extreme profiles of Balanced and Unbalanced. Also, both cluster analyses identified six profiles. As expected, there are some differences between the American and Polish profiles. However, this does not influence the positive assessment of their validity or usefulness.

Conclusion

Developing translations of assessment instruments always opens numerous problems related to their intercultural adaptation (Brzeziński, 1999). The original version, FACES IV, has high reliability and validity, based on which the authors recommend its use for a wide scope of research studies as well as clinical assessments. In the the Polish version, FACES IV-SOR, the instrument has less reliability and validity, although the models's main assumptions are confirmed.

Confirmatory factor analysis conducted on data acquired from the Polish sample initially accepts FACES IV-SOR factorial structure as corresponding to the factorial structure of FACES IV. Further work is advised that focuses on reformulating statements with low factor loadings. This will help improve the model fit indices. In FACES IV-SOR, the highest reliability measures are on the Family Life Satisfaction and Family Communication scales. The reliability of both Balanced scales also allows their clinical use in connection with other instruments. In regard to the remaining scales: on the four Unbalanced scales, their reliability measures are lower but are still able to be used for both research and clinical work. Numerous applications in recent times of this instrument indicate a large need in Polish psychological circles for a reliable instrument that assesses the family system.

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Appendix 1

David H.Olson, Dean M.Gorall, Judy W.Tiesel
FACES IV QUESTIONNAIRE

Directions to Family Members:

1. All family members over age 12 can complete FACES IV.

2. Family members should complete the instrument independently, not consulting or discussing their responses until they have been completed.

3. Fill in the corresponding **number** *in the space on the provided answer sheet.*

1	2	3	4	5
DOES NOT describes our family at all	SLIGHTLY describes our family	SOMEWHAT describes our family	GENERALLY describes our family	VERY WELL describes our family

1. Family members are involved in each other's lives.
2. Our family tries new ways of dealing with problems.
3. We get along better with people outside our family than inside.
4. We spend too much time together.
5. There are strict consequences for breaking the rules in our family.
6. We never seem to get organized in our family.
7. Family members feel very close to each other.
8. The parents check with the children before making important decisions.
9. Family members seem to avoid contact with each other when at home.
10. Family members feel pressured to spend most free time together.
11. There are severe consequences when a family member does something wrong.
12. We need more rules in our family.
13. Family members are supportive of each other during difficult times.
14. Children have a say in their discipline.
15. Family members feel closer to people outside the family than to other family members.
16. Family members are too dependent on each other.
17. This family has a rule for almost every possible situation.
18. Things do not get done in our family.
19. Family members consult other family members on personal decisions.
20. In solving problems, the children's suggestions are followed.

21. Family members are on their own when there is a problem to be solved.

22. Family members have little need for friends outside the family.

23. It is difficult to get a rule changed in our family.

24. It is unclear who is responsible for things (chores, activities) in our family.

25. Family members like to spend some of their free time with each other.

26. We shift household responsibilities from person to person.

27. This family doesn't do things together.

28. We feel too connected to each other.

29. Once a task is assigned to a member, there is little chance of changing it.

30. There is no leadership in this family.

1	2	3	4	5
DOES NOT describe our family at all	SLIGHTLY describes our family	SOMEWHAT describes our family	GENERALLY describes our family	VERY WELL describes our family

31. Although family members have individual interests, they still participant in family activities.

32. Family members make the rules together.

33. Family members rarely depend on each other.

34. We resent family members doing things outside the family.

35. It is important to follow the rules in our family.

36. No one in this family seems to be able to keep track of what their duties are.

37. This family has a good balance of separateness and closeness.

38. When problems arise, we compromise.

39. Family members know very little about the friends of other family members.

40. Family members feel guilty if they want to spend time away from the family.

41. Family members feel they have to go along with what the family decides to do.

42. It is hard to know who the leader is in this family.

43. Family members are satisfied with how they communicate with each other.

44. Family members are very good listeners.

45. Family members express affection to each other.

46. Family members are able to ask each other for what they want.

47. Family members can calmly discuss problems with each other.

48. Family members discuss their ideas and beliefs with each other.

49. When family members ask questions of each other, they get honest answers.

50. Family members try to understand each other's feelings

51. When angry, family members seldom say negative things about each other.

52. Family members express their true feelings to each other.

1	2	3	4	5
Very Dissatisfied	Somewhat Dissatisfied	Generally Satisfied	Very Satisfied	Extremely Satisfied

53. The degree of closeness between family members.

54. Your family's ability to cope with stress.

55. Your family's ability to be flexible.

56. Your family's ability to share positive experiences.

57. The quality of communication between family members.

58. Your family's ability to resolve conflicts.

59. The amount of time you spend together as a family.

60. The way problems are discussed.

61. The fairness of criticism in your family.

62. Family members concern for each other.

Thank you for Your Cooperation!

Polish version of FACES IV-SOR

David H.Olson, Dean M.Gorall, Judy W.Tiesel
KWESTIONARIUSZ FACES IV – SKALE OCENY RODZINY
(opr. A.Margasiński)

Instrukcje dla członków rodzin:

1. Kwestionariusz mogą wypełniać wszyscy członkowie rodzin w wieku powyżej 12 lat.

2. Członkowie rodziny powinni odpowiadać na pytania samodzielnie, nie konsultując ani nie omawiając ze sobą odpowiedzi aż do zakończenia uzupełniania kwestionariusza.

3. W celu wypełnienia kwestionariusza proszę wpisać na Arkuszu Odpowiedzi liczbę punktów odpowiadającą wybranej odpowiedzi.

1	2	3	4	5
Całkowicie się nie zgadzam	Częściowo się nie zgadzam	Nie mam zdania	Częściowo się zgadzam	Całkowicie się zgadzam

1. Członkowie rodziny zaangażowani są w życie pozostałych jej członków.

2. Nasza rodzina wypróbowuje nowe sposoby radzenia sobie z problemami.

3. Z osobami spoza naszej rodziny mamy lepsze stosunki niż z członkami rodziny.

4. Spędzamy razem zbyt dużo czasu.

5. Za złamanie zasad obowiązujących w naszej rodzinie przewidziane są surowe konsekwencje.

6. Zorganizowanie się naszej rodziny wydaje się niemożliwe.

7. Członkowie rodziny czują się sobie bardzo bliscy.

8. W naszej rodzinie rodzice dzielą się przywództwem.

9. W domu członkowie rodziny zdają się unikać ze sobą kontaktu.

10. Członkowie rodziny odczuwają presję, by spędzać większość czasu wolnego razem.

11. Jeśli któryś z członków rodziny zrobi coś niewłaściwego, to spotykają go wyraźne konsekwencje.

12. Trudno powiedzieć, kto rządzi w naszej rodzinie.

13. Członkowie rodziny wspierają się wzajemnie w trudnych chwilach.

14. W naszej rodzinie zasady dyscypliny są jasno określone.

15. Członkowie rodziny wiedzą bardzo mało o przyjaciołach pozostałych członków rodziny.

16. Członkowie rodziny są od siebie zbytnio uzależnieni.

17. Nasza rodzina ma przewidziane reguły postępowania na niemal każdą możliwą sytuację.

18. W naszej rodzinie brak jest skuteczności w działaniu.

19. Członkowie rodziny konsultują się ze sobą przed podjęciem ważnych decyzji.

20. Gdy trzeba moja rodzina potrafi się zmieniać.

21. Kiedy jest do rozwiązania problem, każdy w rodzinie jest pozostawiony sam sobie.

22. Członkowie rodziny nie mają wielkiej potrzeby posiadania przyjaciół spoza rodziny.

23. Nasza rodzina jest mocno zorganizowana.

24. Nie jest jasne, kto jest w naszej rodzinie odpowiedzialny za różne codzienne obowiązki.

25. Członkowie rodziny lubią spędzać ze sobą pewną część swojego wolnego czasu.

26. Obowiązkami domowymi wymieniamy się wzajemnie.

27. Nasza rodzina rzadko robi coś razem.

28. Czujemy się ze sobą zbyt związani.

29. Czujemy się sfrustrowani, gdy nasze plany lub nawyki ulegają zmianom.

30. W naszej rodzinie nie ma przywództwa.

1	2	3	4	5
Całkowicie się nie zgadzam	Częściowo się nie zgadzam	Nie mam zdania	Częściowo się zgadzam	Całkowicie się zgadzam

31. Członkowie rodziny uczestniczą we wspólnych zajęciach rodzinnych, mimo, że mają swoje własne zainteresowania

32. W naszej rodzinie są jasne role i zasady.

33. Członkowie rodziny rzadko mogą liczyć na siebie.

34. Niechętnie patrzymy na członków rodziny realizujących się poza rodziną.

35. W naszej rodzinie ważne jest przestrzeganie zasad.

36. W naszej rodzinie trudno ustalić, kto odpowiada za różne zadania domowe.

37. W naszej rodzinie panuje równowaga między bliskością a byciem osobno.

38. Kiedy pojawiają się problemy, idziemy na kompromis.

39. Członkowie rodziny przeważnie działają niezależnie od siebie.

40. Członkowie rodziny mają poczucie winy, kiedy chcą spędzić jakiś czas z dala od rodziny.

41. Gdy w naszej rodzinie zapadnie jakaś decyzja bardzo trudno ją zmienić.

42. W naszej rodzinie panuje atmosfera chaosu i dezorganizacji.

43. Członkowie rodziny są zadowoleni z tego, jak wygląda komunikacja między nimi.

44. Członkowie rodziny potrafią bardzo dobrze słuchać.

45. Członkowie rodziny odnoszą się do siebie serdecznie.

46. Członkowie rodziny potrafią prosić pozostałych członków o to, czego chcą.

47. Członkowie rodziny potrafią spokojnie omawiać ze sobą problemy.

48. Członkowie rodziny omawiają ze sobą swoje poglądy i przekonania.

49. Kiedy członkowie rodziny wzajemnie się o coś pytają, otrzymują szczere odpowiedzi.

50. Członkowie rodziny starają się wzajemnie rozumieć swoje uczucia.

51. Pod wpływem gniewu, członkowie rodziny rzadko wyrażają się negatywnie o pozostałych członkach rodziny.

52. Członkowie rodziny okazują sobie wzajemnie swoje prawdziwe uczucia.

1	2	3	4	5
Bardzo niezadowolony	Częściowo niezadowolony	Przeciętnie zadowolony	Bardzo zadowolony	Niezmiernie zadowolony

Oceń jak satysfakcjonuje Cię:

53. Stopień bliskości między członkami rodziny.

54. Zdolność twojej rodziny do radzenia sobie ze stresem.

55. Zdolność twojej rodziny do elastyczności.

56. Zdolność twojej rodziny do wspólnego przeżywania pozytywnych doświadczeń.

57. Jakość komunikacji między członkami rodziny.

58. Zdolność twojej rodziny do rozwiązywania konfliktów.

59. Ilość czasu spędzanego razem jako rodzina.

60. Sposób w jaki omawiane są problemy.

61. Stopień sprawiedliwości krytyki w twojej rodzinie.

62. Troska członków rodziny o siebie wzajemnie.

Dziękujemy za współpracę!

Appendix 2.

FACES IV Scales with Item Numbers

TWO BALANCED SCALES:

Balanced Cohesion

1. Family members are involved in each other's lives.

7. Family members feel very close to each other.

13. Family members are supportive of each other during difficult times.

19. Family members consult other family members on personal decisions.

25. Family members like to spend some of their free time with each other.

31. Although family members have individual interests, they still participate in family activities.

37. This family has a good balance of separateness and closeness.

Balanced Flexibility

2. Our family tries new ways of dealing with problems.

8. The parents check with the children before making important decisions in this family.

14. Children have a say in their discipline.

20. In solving problems, the children's suggestions are followed.

26. We shift household responsibilities from person to person.

32. Family members make the rules together.

38. When problems arise, we compromise.

FOUR UNBALANCED SCALES:

Disengaged

3. We get along better with people outside our family than inside.

9. Family members seem to avoid contact with each other when at home.

15. Family members feel closer to people outside the family than to other family members.

21. Family members are on their own when there is a problem to be solved.

27. This family doesn't do things together.

33. Family members rarely depend on each other.

39. Family members know very little about the friends of other family members.

Enmeshed

4. We spend too much time together.

10. Family members feel pressured to spend most free time together.

16. Family members are too dependent on each other.

22. Family members have little need for friends outside the family.

28. We feel too connected to each other.

34. We resent family members doing things outside the family.

40. Family members feel guilty if they want to spend time away from the family.

Rigid

5. There are strict consequences for breaking the rules in our family.

11. There are severe consequences when a family member does something wrong.

17. This family has a rule for almost every possible situation.

23. It is difficult to get a rule changed in our family.

29. Once a task is assigned to a member, there is little chance of changing it.

35. It is important to follow the rules in our family.

41. Family members feel they have to go along with what the family decides to do.

Chaotic

6. We never seem to get organized in our family.

12. We need more rules in our family.

18. Things do not get done in our family.

24. It is unclear who is responsible for things (chores, activities) in our family.

30. There is no leadership in this family.

36. No one in this family seems to be able to keep track of what their duties are.

42. It is hard to know who the leader is in this family.

FAMILY COMMUNICATION:

43. Family members are satisfied with how they communicate with each other.

44. Family members are very good listeners.

45. Family members express affection to each other.

46. Family members are able to ask each other for what they want.

47. Family members can calmly discuss problems with each other.

48. Family members discuss their ideas and beliefs with each other.

49. When family members ask questions of each other, they get honest answers.

50. Family members try to understand each other's feelings

51. When angry, family members seldom say negative things about each other.

52. Family members express their true feelings to each other.

FAMILY SATISFACTION:

53. The degree of closeness between family members.

54. Your family's ability to cope with stress.

55. Your family's ability to be flexible.

56. Your family's ability to share positive experiences.

57. The quality of communication between family members.

58. Your family's ability to resolve conflicts.

59. The amount of time you spend together as a family.

60. The way problems are discussed.

61. The fairness of criticism in your family.

62. Family members concern for each other.

Polish version

FACES IV-SOR: Konstrukcja skal z przyporządkowanymi itemami

DWIE SKALE ZRÓWNOWAŻENIA:

Zrównoważona Spójność

1. Członkowie rodziny zaangażowani są w życie pozostałych jej członków.

7. Członkowie rodziny czują się sobie bardzo bliscy.

13. Członkowie rodziny wspierają się wzajemnie w trudnych chwilach.

19. Członkowie rodziny konsultują się ze sobą przed podjęciem ważnych decyzji.

25. Członkowie rodziny lubią spędzać ze sobą pewną część swojego wolnego czasu.

31. Członkowie rodziny uczestniczą we wspólnych zajęciach rodzinnych, mimo, że mają swoje własne zainteresowania.

37. W naszej rodzinie panuje równowaga między bliskością a byciem osobno.

Zrównoważona Elastyczność

2. Nasza rodzina wypróbowuje nowe sposoby radzenia sobie z problemami.

8. W naszej rodzinie rodzice dzielą się przywództwem.

14. W naszej rodzinie zasady dyscypliny są jasno określone.

20. Gdy trzeba moja rodzina potrafi się zmieniać.

26. Obowiązkami domowymi wymieniamy się wzajemnie.

32. W naszej rodzinie są jasne role i zasady.

38. Kiedy pojawiają się problemy, idziemy na kompromis.

CZTERY SKALE NIEZRÓWNOWAŻENIA:

Niezwiązanie

3. Z osobami spoza naszej rodziny mamy lepsze stosunki niż z członkami rodziny.

9. W domu członkowie rodziny zdają się unikać ze sobą kontaktu.

15. Członkowie rodziny wiedzą bardzo mało o przyjaciołach pozostałych członków rodziny.

21. Kiedy jest do rozwiązania problem, każdy w rodzinie jest pozostawiony sam sobie.

27. Nasza rodzina rzadko robi coś razem.

33. Członkowie rodziny rzadko mogą liczyć na siebie.

39. Członkowie rodziny przeważnie działają niezależnie od siebie.

Splątanie

4. Spędzamy razem zbyt dużo czasu.

10. Członkowie rodziny odczuwają presję, by spędzać większość czasu wolnego razem.

16. Członkowie rodziny są od siebie zbytnio uzależnieni.

22. Członkowie rodziny nie mają wielkiej potrzeby posiadania przyjaciół spoza rodziny.

28. Czujemy się ze sobą zbyt związani.

34. Niechętnie patrzymy na członków rodziny realizujących się poza rodziną.

40. Członkowie rodziny mają poczucie winy, kiedy chcą spędzić jakiś czas z dala od rodziny.

Sztywność

5. Za złamanie zasad obowiązujących w naszej rodzinie przewidziane są surowe konsekwencje.

11. Jeśli któryś z członków rodziny zrobi coś niewłaściwego, to spotykają go wyraźne konsekwencje.

17. Nasza rodzina ma przewidziane reguły postępowania na niemal każdą możliwą sytuację.

23. Nasza rodzina jest mocno zorganizowana.

29. Czujemy się sfrustrowani, gdy nasze plany lub nawyki ulegają zmianom.

35. W naszej rodzinie ważne jest przestrzeganie zasad.

41. Gdy w naszej rodzinie zapadnie jakaś decyzja bardzo trudno ją zmienić.

Chaotyczność

6. Zorganizowanie się naszej rodziny wydaje się niemożliwe.

12. Trudno powiedzieć, kto rządzi w naszej rodzinie.

18. W naszej rodzinie brak jest skuteczności w działaniu.

24. Nie jest jasne, kto jest w naszej rodzinie odpowiedzialny za różne codzienne obowiązki.

30. W naszej rodzinie nie ma przywództwa.

36. W naszej rodzinie trudno ustalić, kto odpowiada za różne zadania domowe.

42. W naszej rodzinie panuje atmosfera chaosu i dezorganizacji.

SKALA KOMUNIKACJI RODZINNEJ (KR):

43. Członkowie rodziny są zadowoleni z tego, jak wygląda komunikacja między nimi.

44. Członkowie rodziny potrafią bardzo dobrze słuchać.

45. Członkowie rodziny odnoszą się do siebie serdecznie.

46. Członkowie rodziny potrafią prosić pozostałych członków o to, czego chcą.

47. Członkowie rodziny potrafią spokojnie omawiać ze sobą problemy.

48. Członkowie rodziny omawiają ze sobą swoje poglądy i przekonania.

49. Kiedy członkowie rodziny wzajemnie się o coś pytają, otrzymują szczere odpowiedzi.

50. Członkowie rodziny starają się wzajemnie rozumieć swoje uczucia.

51. Pod wpływem gniewu, członkowie rodziny rzadko wyrażają się negatywnie o pozostałych członkach rodziny.

52. Członkowie rodziny okazują sobie wzajemnie swoje prawdziwe uczucia.

SKALA ZADOWOLENIA Z ŻYCIA RODZINNEGO (ZR):

53. Stopień bliskości między członkami rodziny.

54. Zdolność twojej rodziny do radzenia sobie ze stresem.

55. Zdolność twojej rodziny do elastyczności.

56. Zdolność twojej rodziny do wspólnego przeżywania pozytywnych doświadczeń.

57. Jakość komunikacji między członkami rodziny.

58. Zdolność twojej rodziny do rozwiązywania konfliktów.

59. Ilość czasu spędzanego razem jako rodzina.

60. Sposób w jaki omawiane są problemy.

61. Stopień sprawiedliwości krytyki w twojej rodzinie.

62. Troska członków rodziny o siebie wzajemnie.

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What Drives Shopping Mall Attractiveness?

Abstract:

My article investigated the drivers of shopping mall attractiveness. Which of various shopping mall qualities are key to building a mall's attractiveness? This was the fundamental question in the cross-sectional, survey-based correlational study. The participants included 384 adult Poles (192 men and 192 women whose median age was 22). The survey included 58 items – nine to measure the shopping mall's attractiveness (its emotional impact, cognitive effect and the customer's visiting frequency), and 49 to measure its hypothetical predictors. The investigated objects were six urban shopping malls in Wroclaw, Poland. It turned out that shopping mall attractiveness was driven mainly by their atmosphere and social positioning. Surprisingly, the more subjectively noisy and crowded the shopping mall was, the more attractive it appeared to be; commerce-related features, on the other hand, while usually treated as vital to a shopping center, contributed relatively little to the mall's attractiveness.

Keywords*:*

environmental appraisal; shopping mall

Streszczenie:

Ten artykuł dotyczy atrakcyjności współczesnych galerii handlowych. Które spośród wielu różnych cech galerii handlowych, i w jakiej hierarchii, warunkują ich atrakcyjność? To pytanie na które spróbowałem odpowiedzieć po przeprowadzeniu przekrojowego badania korelacyjnego i przeanalizowaniu jego wyników. W projekcie wzięło udział 384 dorosłych Polaków (192 mężczyzn i 192 kobiet, przeciętnie 22 letnich). Kwestionariusz, który wypełniali, zawierał 58 pytań – dziewięć mierzących atrakcyjność galerii handlowej (diagnozujących ustosunkowanie emocjonalne wobec galerii, jej ocenę poznawczą oraz częstotliwość wizyt) oraz 49 pytań mierzących hipotetyczne predyktory atrakcyjności po stronie galerii handlowej. Badani oceniali wielowymiarowo sześć galerii handlowych usytuowanych w centrum Wrocławia. Okazało się, że atrakcyjność galerii handlowych była współzmienna przede wszystkim ze spostrzeganą ich atmosferą i pozycjonowaniem społecznym. Co ciekawe, im bardziej były galerie (subiektywnie) hałaśliwe i zatłoczone, tym bardziej atrakcyjne jednocześnie się okazywały. Z kolei typowo handlowe, spostrzegane przez badanych cechy galerii, zwykle w literaturze przedmiotu traktowane jako kluczowe dla ich funkcjonowania, okazały się relatywnie słabo związane z ogólną atrakcyjnością galerii handlowych.

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Słowa kluczowe:

psychologia środowiskowa, ocena środowiska, atrakcyjność środowisk handlu, galerie handlowe, centra handlowe

Introduction

Places that we love are not always unequivocally beautiful, nor do they induce magnificent sensory experiences; and they are not always perfectly functional. Some places and structures are just somehow more attractive than others; they constitute specific "magnets" in the ordinary environment full of otherwise unexceptional objects which we do not pay much attention to. These magnets are tangible entities, while their magnetic fields and magnetism are intangible, invisible (but forceful) powers that pull people towards particular objects; they make people want to visit them, explore, spend some time and maybe even invite some friends. Everyone knows lively piazzas, bustling promenades and boulevards, as well as so-called third places or small public spaces – all being magnets attracting people towards themselves. They are as old as human permanent settlements in general. Their invisible "magnetism" has been the subject of many classic urban studies (Gehl, 2010; Oldenburg, 1999; Whyte, 1980), although not introducing such a term explicitly, but relying on a common – albeit somewhat fuzzy – concept of attractiveness.

The most attractive, famous places such as Piazza del Campo in Siena, Italy, Champs-Élysées in Paris, France, or the space around the Spanish Steps in Rome, are visited by millions every year. They have several features which make them great public spaces that attract many people (Gehl, 2010), but none of them physically pull anyone towards it. This pulling force is a "by-product" of how it is perceived. After all these places are not even "proper places" unless they are perceived as such – if we apply, for example, Creswell's (2011), Lewicka's (2008) or Auge's (1995) conceptualizations of the term "place". Once it is perceived as a physical place full of particular features (inevitably in a physical, cultural and observer-specific mental context), it can turn out to be a magnet – a highly attractive environment. Until then, it only demonstrates a potential to become such an attractor.

The environment is attractive whenever and only if it has a capability to be perceived in a way that induces positive emotions, a positive cognitive appraisal and if it encourages people to approach or to get inside. Attractiveness as a percept is built upon the needs, demands and preferences of the individual. As Niedomysl (2006) argued, the greater the extent to which a place can fulfil these three factors, the greater its attractiveness is; it is assessed subjectively and is dependent on a situation. Obviously such a vague concept cannot be perfectly measured, but there are probably three fundamental aspects of a place or built object's momentary attractiveness: its emotional impact, cognitive ef-

fect and its attraction force. From this point on, I will use the term attractiveness in this exact meaning.

Relatively recently new attractors have emerged in urban environments around the world – shopping malls. While the concept had not yet been refined in the fifties (Gruen & Smith, 1960), it nowadays attracts millions, in various locations on the globe (Backes, 1997; PropertyNews, 2013; Rzeczpospolita, 2013). Gone are the days when a shopping mall was a significant part of the universe just for the American "suburban nation" (Duany, Plater-Zyberk, & Speck, 2010). Modern malls are "worlds in themselves" (Crawford, 1992), "circuses for the masses" (Goss, 1993), "indoor cities" (Uzzell, 1995) and an idyllic "fantasy urbanism" (Crawford, 1992, p. 22) for suburban as well as urban dwellers (Gillette, 1985). Shopping malls became more and more "natural" environments for people of the 21st century; "consumer habitats" – as Bloch, Ridgway and Dawson put it (1994). People like to "gravitate" (Wolf, 2003) towards these "magnets".

Shopping malls, the contemporary urban attractors, have become bigger and more complex structures than ever before (Kalinowska, 2008). Nowadays they are monstrous architectural objects hundreds of thousands of square meters in size (Pietzsch, 2012); their footprints are many times bigger than the size of any traditional medieval marketplace in the heart of a European city, many times bigger than, for example, a football pitch. Hundreds of shops and services under their gargantuan roofs fulfill both utilitarian and hedonic human needs (Arnold & Reynolds, 2003; Babin, Darden, & Griffin, 1994; Jones, Reynolds, & Arnold, 2006; Ng, 2003; Uzzell, 1995); and they do it better every day. This is probably the main reason they are visited so often and multitudinously. This also might be the reason why shopping malls are – or will soon become – not merely shops, but main urban spaces to spend leisure time; at least in the opinion of the majority of Poles (Bosiacki & Rydlewski, 2009).

In Poland shopping malls have been an extremely controversial and popular topic of public debate for over ten years, primarily in newspapers (Bartoszewicz, 2004; Kokoszkiewicz, 2013; Otto, 2012; Wit, 2010) but also elsewhere (Lorens, 2005; Makowski, 2003; Rabiej, 2008; Witek, Grzesiuk, & Karwowski, 2008). The main disputes are about the shopping mall's influence on local commerce and urban-design issues, as well as on the present and future social lives of Poles.

The first shopping malls in Poland were built during the early 1990s. Since then they have revolutionized the Polish cities' commercial and public landscapes, altered lifestyles of many Poles, and indeed made prostheses of lively public spaces, forcing the downfall of many traditional, real public ones in the time of post-socialist Polish city transformations. Today, despite the laments of journalists, urban activists and some scholars, Poles are still visiting shopping malls massively. For example, a moderately

sized shopping mall in Poland was attracting between 130 to 160 thousand people during an ordinary weekend (Rzeczpospolita, 2013), or roughly 15 million people a year (PropertyNews, 2013). Many new shopping malls are developing across the country, and since the end of the first decade of the second millennium also in smaller towns (Emerson Nieruchomości, 2008). Today, they are certainly among the most attractive quasi-public spaces (Cohen, 1996) in a contemporary Polish urban area.

But what is the very essence of the shopping mall's attractiveness? What makes a particular mall more attractive than another? Which factors (percepts) drive our emotional reactions towards it, affect our well-being within this structure and our appraisal of it? What is the hierarchy of features creating a shopping mall's attractiveness? Is it the mall's purely commercial dimension (e.g. tenant-mix) that constitutes the attraction? Or is it something more intangible: the atmosphere, design, a mall's potential for spending leisure time within, or its general image? These are crucial questions I have seek to answer in my study.

Literature Review

There is not much research in environmental psychology addressing the issues of human relationships with shopping malls. An attempt to find articles with "mall" in the title, abstract or keywords, yielded four hits in Journal of Environmental Psychology and nine in Environment and Behavior[2]. While environmental psychologists do investigate retail environments and their effect on people (for a review see e.g. Gifford, 2007), shopping malls in particular are arguably not the most popular topic of their interests.

The framework for studying people-shopping mall relationships

In the one of the most comprehensive articles on the topic in environmental psychology, Ng (2003) argued that shopping malls are attractive not only because they handle utilitarian shopping needs, which most of us naturally have, but also because they have great leisure and hedonic potential. He presented a useful conceptual framework for understanding the shopper–environmental fit. According to this framework, shopping mall attractiveness can emerge from their ability to fulfill a shopper's cognitive, physiological and social needs, varying across shoppers' individual characteristics and situational factors. Shopping malls (as well as other shopping environments) face this challenge in providing shoppers with a unique aesthetic experience, special auditory, olfactory, and tactile stimulation, a functional layout, pleasant architecture, navigational aids, seating, tenant variety, and general complexity, as well as by attracting other people.

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[2] A search for the keyword "mall" in the article title, abstract, or article's keywords at www.sciencedirect.com, October 13th 2013, and a search for the keyword "mall" in the article title, abstract or article's keywords at www.eab.sagepub.com/search (date range 1969-2014), October 13th 2013

Also numerous business scholars argue that so-called consumers' "patronage", "well-being", "retention proneness" or simply "satisfaction from" a shopping mall, could also be driven by two even broader (in fact partially overlapping) factors: atmosphere (Arentze, Oppewal, & Timmermans, 2005; Chebat, Sirgy, & Grzeskowiak, 2010; Hoffman & Turley, 2002; Massicotte, Michon, Chebat, Sirgy, & Borges, 2011; Michon, Chebat, & Turley, 2005; Pan & Zinkhan, 2006; Ruiz, Chebat, & Hansen, 2004; Turley & Milliman, 2000) and convenience (Bellenger, Robertson, & Greenberg, 1977; El-Adly, 2007; Pan & Zinkhan, 2006; Reimers & Clulow, 2009; Wagner, 2007).

The importance of the above-named factors to the perception of any retail environment seems almost unquestionable, as they were tested and verified in much research to date (Bellenger et al., 1977; Brito, 2009; El Hedhli, Chebat, & Sirgy, 2013; Finn & Louviere, 1996; Kirkup & Rafiq, 1994; Singh & Prashar, 2013; Teller, 2008; Wakefield & Baker, 1998). Unfortunately, the hierarchy of these factors – affecting particularly shopping mall attractiveness – remains unclear.

The atmosphere

Atmosphere can be the first and the most important driver of the way a shopping mall is perceived. As Kotler (1973) long ago argued, atmosphere is among the most important and usable marketing tools in point of sale such as a shopping center. It may affect shopper perceptions and behavior as well as make the shopping environment unique. Pan and Zinkhan (2006) demonstrated that atmosphere significantly affected consumers' choice of a particular store, being fourth in ten significant drivers of retail venue patronage. According to Teller and Reutterer (2008), atmosphere (and ambiance) could be an even more important factor to overall attractiveness of a shopping mall than the merchandise value itself. Chebat et al. (2010) reported a pleasant and moderately arousing atmosphere (color, music, crowding) contribute to shopping mall patronage (via "favorableness"). Ambiance extracted the majority of a "shopping experience in a mall" variance in an empirical study by Singh and Prahsar (2013). Atmosphere also turned out as a significant factor determining "shopping well-being at the mall" in a study by El Hedhli et. al. (2013), even if it was not the number one. Rayburn and Voss (2013) proved that the atmosphere was a key mediating variable between perceived organization, perceived style, and perceived moderness of four different retailers (Old Navy, Rue 21, J.C. Penney, Belk) and the customer's utilitarian and hedonic shopping value of the above-mentioned shops.

We have to remember, though, that research on atmosphere varies dramatically, because the constructs are diversely conceptualized. Elusive in its nature (Havik, Teerds, & Tielens, 2013), atmosphere could be – and has been – operationalized by a variety of constructs and measures (Turley & Milliman, 2000). The outcome variables in past research were also various constructs. According to Turley and Milliman (2000) again,

researchers were interested in the effect of atmosphere on either sales or purchase behavior; impulse buying or time spent in the store; approach-avoidance behavior or, like in Singh and Prashar (2013): a general shopping experience.

The convenience

The shopping mall's convenience is the next almost certain constituent of its attractiveness. Unfortunately, still little is known about its importance, when related to other factors. Pioneering research in the field by Bellenger et al. (1977) showed that convenience is a key driver of shopping center "patronage". Such a finding has some empirical support, as demonstrated by Pan and Zinkhan (2006) in their meta-analysis of retail patronage determinants. Also in the United Arab Emirates convenience was an important factor, although not the key one, to mall attractiveness (El-Adly, 2007); the sample in this study was heavily biased, though, as all participants were UAE University staff. "Time convenience" (a conglomerate of one-stop shopping, extended trading hours, a compact environment, and localization close to where consumers live or work) appeared as the key factor in forming consumers' attitudes toward a shopping center in a recent study by Raimers and Clulow (2009). However, the newest evidence challenged former convenience-centric results. In the study by Singh and Prashar (2013) convenience was the second factor (after ambiance) in building a shopping experience; El Hedhli et al (2013) argued that convenience is the third factor to drive shopping well-being, preceded by self-identification with a shopping mall and its atmosphere. As in the case of atmosphere, convenience was also operationalized differently by particular scholars; different approaches were undertaken to reveal its significance to a number of outcome constructs such as shopping experience, "physical & mental balance", feeling well, shopping satisfaction, contentment or even the quality of life (Wagner, 2007).

Tenant-mix

Tenant-mix seems the most commonly established as one of the most important dimensions of a shopping mall (Brito, 2009; Finn & Louviere, 1996; Kirkup & Rafiq, 1994; Teller, 2008). And indeed, Finn and Louviere (1996) reported the enormous influence of an anchor stores' characteristics on the shopping center image. Later on Teller and Reuterer (2008) showed that tenant-mix was the most among all other factors influencing overall attractiveness of retail agglomerations. However, the newest evidence brought by Singh and Prashar (2013) showed that "marketing" (including a tenant-mix) is third in line to constitute the overall shopping experience, after ambiance and convenience; El Heldhi et al. (2013) discovered that "functionality" (which included a tenant-mix) is the fourth constituent of shopping well-being.

The design

Other factors such as shopping mall design, are also ambiguous when it comes to their importance as drivers of perception. Early studies, for example, Bellenger et al. (1977) showed that attractive décor was moderately but significantly correlated to shopping center patronage. Then Bellenger and Korgaonkar (1980) discovered that shop décor is a highly valued feature of shopping, especially by recreational shoppers (active, social, information seeking individuals). Wakefield and Baker (1998) revealed a mall's design as the most important factor predicting the "excitement" in its being visited, and its décor as the most important driver of the "desire to stay". Raajpoot, Sharma and Chebat (2008) discovered that design is one of the most important environmental factors of overall shopping mall evaluation as well as of the emotional response. Surprisingly, the most recent authors did not take the design and décor explicitly into account (Singh & Prashar, 2013); and if they even partially did, as layout-related variables (El Hedhli et al., 2013), the design and décor turned out clearly not to be of prime importance to a mall's perception. It should also be noted that, in some concepts, widely defined décor is treated as an indicator of atmosphere (cf. Chebat et al., 2010; Kotler, 1973).

Shoppers' individual traits and demographics

Hedonism-utilitarianism

Another group of correlates to perceived shopping environment attractiveness, although lying beyond the environment and not being my article's focus, is the whole universe of the users' individual traits . Among the most studied is hedonism-utilitarianism as a personal value (Arnold & Reynolds, 2003; Babin et al., 1994; Bloch et al., 1994; Jones et al., 2006; Roy, 1994; Wagner, 2007). It is already known that shoppers could be task-oriented or leisure oriented (Bloch et al., 1994), and such an orientation could decide whether we are more or less prone to like the shopping mall environment in general. Hedonic shoppers highly appreciate shopping malls because these environments offer a high leisure and experiential capability. An interesting finding, at least for this article, was that the pleasant store atmosphere could be vital not only to hedonic, but also to utilitarian shoppers (Wagner, 2007) as well as to utilitarian and hedonic shopping value in general retail (Rayburn & Voss, 2013). By the way, atmospheric experience turned out to be one of the most important positive shopping mall drivers in adolescent girls' narratives (Haytko & Baker, 2004), as it was in my study regardless of gender (see Shopping mall attractiveness in structural equation modelling).

Other shoppers' personal values

There were also noticeable attempts to link the perceived store image and seeking for improvement to the customer's life quality (Thompson & Chen, 1998b), or perceived store image and the pursuit for comfort, and excitement, pleasure, and social recognition (Erdem, Oumlil, & Tuncalp, 1999). The more a shopper pursued social recognition, the more the store status was important to him or her; conversely, the more a shopper valued, for example, intellect, logic and independence, the less he or she valued store status (Erdem et al., 1999).

Others researchers investigated the relationship between consumer self-identification (Hirschman & Stampfl, 1980), social life (Thompson & Chen, 1998a) or social affiliation and self-actualizing values and shopping environment patronage (Shim & Eastlick, 1998). In general, the shoppers who place stronger emphasis on social affiliation were more likely to have a favorable attitude toward shopping malls than those with weaker values. Similar research was conducted by Swinyard (1998) - he discovered that people having higher needs for a sense of belonging, warm relationships with others, and security are more likely than others to be heavy mall visitors. He had also shown that there was a positive link between consumer pursuit after 'excitement' and 'fun and enjoyment' to the frequency of visits. Cai and Shannon (2012a; 2012b) discovered that among Chinese shoppers self-transcendence and self-enhancement were positively related to mall attitude; so was the openness to change in the Thai sample. Such an attitude was positively related to the shopping intention, and the intention was related not only to shopping frequency, but also to the time and money spent in the mall.

In the latest research Telci (2013) investigated materialism, and reported that people who visit shopping malls frequently and enjoy spending time there reported higher materialistic values and engaged in greater compulsive consumption.

Gender

Gender is one of the most extensively explored demographic differences in shopping studies to date. The well-founded knowledge (Hart, Farrell, Stachow, Reed, & Cadogan, 2007) is that men and women shop for different reasons, are driven by different environmental cues throughout shopping, experience shopping environments in different ways, and have different attitudes towards shops and shopping. It is also assumed that men and women differ in frequency of shopping, and amount of money spent in shops; moreover, they spend them for different things and activities. Results of various research including the newest described below, although not univocal, suggest that such assumptions are reasonable.

Campbell (1997) argued that women are more likely than men to express positive attitudes toward shopping; he contended that it is not uncommon for women to 'love'

shopping, as opposed to men who often declare 'hatred' in describing the shopping experience. According to Campbell's (1997) qualitative studies men are centered more on inevitable needs and "work to do" when going shopping, whereas shopping for women is more about desires, cravings and a specific form of leisure; men are more utilitarian, women are more recreational shoppers. The quantitative evidence for the latter is weak though, if not contrary. For example Kuruvilla, Joshi, and Shah (2009) saw no difference in utilitarian-hedonic attitudes to shopping across Indian men and women. Kotzé, North, Stols, & Venter (2012) discovered that men, comparable to women, like to do shopping for entertainment. Jackson, Stoel and Brantley (2011) demonstrated that even though the hedonic shopping value is more important to women, the utilitarian shopping value is important to both men and women.

Nonetheless, the motives of men's and women's shopping may be different indeed. The recent evidence presented by Kotzé et al. (2012) indicated that women go shopping for gratification and sensory stimulation, to relieve stress and reward themselves moreso than men. Women also declared that they do shopping for others more than did men. Women shoppers were seeking for uniqueness and browsing far moreso than men (Noble, Griffith, & Adjei, 2006) at local merchants; they were also motivated by social interaction slightly more than men. The newest research by Gąsior and Skowron (2014) reported different utilitarian purposes of shopping in shopping malls according to gender. Women visited a mall for clothing, cosmetics and jewellery more frequently than men did; conversely, men were more frequently interested in electronics and household appliances.

Women may be sensitive to different stimuli than men when shopping in the mall, and may be allured by different features of the shopping environment. Raajpoot et al. (2008) reported that women were driven by employee behavior, product assortment and accessibility moreso than men in their evaluation of a shopping center. They seem to be more sensitive to environmental aspects of store attributes, hygiene, and entertainment (Jackson et al., 2011). Women also valued different features than men in groceries (Mortimer & Clarke, 2011); in general women praised mostly highest discounts, promotions, prices and hygiene, whereas men valued quickness of finding what they wanted. All the latter stimuli, which meet specific utilitarian needs, differ in women and men.

Finally, women seem to declare more general enjoyment in shopping than did men, as shown, for example, in the studies by Haian and Jasper (2004), Kuruvila et al. (2009) or Kotzé et al. (2012), which constitute a quantitative support for Campbell's (1997) insights obtained from in-depth interviews. Also evidence exists, albeit limited, that women are more loyal shoppers than men (Noble et al., 2006) and more frequent visitors to retail venues (Pan & Zinkhan, 2006). However, Torres, Summers and Belleau (2001) reported that the majority of men were satisfied with their shopping experience, Raajpoot et al.

(2008) and showed that there were no differences between them and women either in overall or emotional evaluation of a shopping center; Kuruvilla et al.(2009) demonstrated that in Indian shopping malls, contrary to popular western beliefs, men were more frequent shoppers, spending there more time and money than women did. These findings are opposite to, for example, Campbell's (1997) arguments and common knowledge about gender-related aspects of shopping. Furthermore, both women and men were equally prone to re-patronize a shopping center based upon their overall evaluation of it (Raajpoot et al., 2008), albeit earlier Hart et al. (2007) discovered that men were more likely than women to re-patronize a shopping district if they enjoyed the shopping experience there before.

The general impression is that men and women are probably somewhat different shoppers. The differences are often minor though; evidence is somewhat mixed. Therefore any general conclusions should be drawn very cautiously. Nevertheless, the evidence suggesting some gender differences in shopping is strong enough that gender should be taken into account at least as a grouping variable whenever the model of shopping-related preferences and behavior is to be developed.

Research question

Summing up the results of research to date, it can be hypothesized that all drivers of a shopping environment's overall attraction (variously defined and operationalized) mentioned above could collectively constitute the foundations of shopping mall attractiveness. The relative importance of one or another driver could be undoubtedly different according to a particular situation, shopper motivation, and personal traits. Notwithstanding the above-mentioned great efforts made by researchers from all over the world to investigate mall visitors' experiences and attitudes, one fundamental question has not been universally answered yet:

"Which various shopping mall qualities are crucial to a mall's attractiveness and how do they contribute?"

In order answer this question I decided to base it on Ng's (2003) theoretical model enriched by the newest reviews and findings, primarily either by El Hedhli et al. (2013) or Singh and Prashar (2013). In theory emerging from such a model, shopping mall attractiveness could be the result of: aesthetic experiences, stimulation (auditory, olfactory, and tactile), functional layout, pleasant architecture, navigational aids, seating, tenant variety, general complexity, atmosphere, convenience, leisure potential and perceived security. It should be also reinforced by the social component, that is: the presence of people desired either for coexistence or even to associate with (called "social positioning" further in this article). They are, in fact, features similar to those known as driving the positive appraisal of a great public space in general (Carmona, 2010; Gehl, 2013).

Some aforementioned constructs are overlapping, some are very difficult to operationalize unless a proper experiment is introduced (e.g. auditory and olfactory stimulation). My attempt at definition and operationalization of such concepts are proposed in details in the research method.

Hypotheses

The following predictions corresponding with the research question were proposed:

H1. There is a set of factors significantly affecting shopping mall attractiveness, which includes: aesthetics, atmosphere, convenience, commercial capability, layout, leisure potential, perceived safety, and social positioning.

I decided not to build any particular hierarchy of factors a priori. The up to date findings were mixed, the outcome variables and predictors varied, and particular research settings were often incomparable. Therefore I assumed that each the factor mentioned in H1 contributes equally to mall attractiveness. Thus, the second hypothesis was:

H2. Aesthetics, atmosphere, convenience, commercial capability, layout, leisure potential, safety, and social positioning are equally important drivers of shopping mall attractiveness.

The research gap here is obvious. First – as has been argued above – certain studies, cited above, showed some schemes but they also brought rather divergent results. Furthermore, many were also highly business oriented (in terms of constructs tested – e.g. purchase behavior, impulse buying etc.). Additionally, all the cited studies were more or less limited, as the authors widely recognized the need to verify their results in different countries, populations and settings (e.g. El Hedhli et al., 2013; Massicotte et al., 2011; Singh & Prashar, 2013; Teller & Reutterer, 2008). Finally – there are no well-known systematic environmental psychology studies on perception of shopping malls in Central Europe. Not only is the shopping mall here a new urban landscape element and a new-fangled built environment, not older than twenty years; nowadays it is also present in a majority of modern post-communist cities, as well as in their inhabitants' lifestyles (Spilková, 2012).

There are also hypotheses regarding gender. As mentioned above, it is highly probable that women and men think differently about shopping and shopping environments. It also possible that they are attracted to a particular shopping environment by its different features. Such assumptions were also present in Ng's model (2003) where demographics indirectly affected shopper needs. Results of research on these topics are ambiguous; therefore, four two-sided hypotheses were proposed:

H3. The set of factors significantly affecting shopping mall attractiveness is different in women's and men's declarations.

H4. The hierarchy of factors affecting shopping mall's attractiveness is different for women and men.

H5. Women and men differ in their general appraisal of shopping malls.

H6. Women and men differ in frequency of visits to shopping malls.

Research Method

A cross-sectional study was conducted in Wroclaw, Poland, to test the hypotheses outlined above. The research project started in November 2012, and ended in January 2014.

Participants and sampling

Participants included 384 individuals (192 men and 192 women) with mean age of 24 years (ranging from 18 to 64, SD = 5.52). The group comprised students from various faculties of Wroclaw University of Technology (N = 138), Wroclaw University of Environmental and Life Sciences (N = 17), as well as from the Psychology Institute at the University of Wroclaw (N = 16), and Wroclaw School of Banking, its Management and Finance faculty (134 full time students and 79 part-time students).

One in four participants came from cities (> 500,000 inhabitants). Ten percent came from big towns (100,000-500,000 inhabitants). Another 30% came from mid-sized towns (10-100,000 inhabitants). Over one-third of the participants (35%) originally came either from villages or very small towns (<10,000 inhabitants). At the time of this study about two-thirds of the participants (65%) were city dwellers.

Twelve percent of the participants declared visiting a particular mall once a week or more. About one-third (34%) declared visiting a particular mall at least a few times in a month. Most participants (39%), however, declared visiting a particular mall a few times in a year, and 19% at the most two times in a year or less. Only seven percent admitted they hardly ever visited the mall.

Materials and procedure

The survey was conducted in various locations; with the vast majority of questionnaires carried out in lecture rooms at participants' respective colleges, and none in a shopping mall. Participation was entirely voluntary. No physical incentives were used. As there were six malls to be assessed with one participant evaluating only one object, each person was randomly assigned by the researcher or his assistants to one of six groups; then he or she was requested to express their opinion about various aspects of a particular mall in a questionnaire and, to provide information about their frequency of visit. There was a filtering question before a person started to fill in the questionnaire – "do you know the …[name]… shopping mall". If not, the respondent was given another shopping mall to assess. In case he or she did not know any of the six investigated shopping malls, the

procedure stopped and a research assistant thanked him or her for participating and proceeded to another participant. The procedure took approximately 20 minutes.

The questionnaire comprised 58 items in total. Eight items were expected to measure the shopping mall's appraisal, one to measure the frequency of visit, and 49 items to measure its eight hypothetical predictors (see sections 6.2.1 and 6.2.2 for details). The eight items to measure appraisal were seven-point Likert-type items (anchored by "not agree at all" and "agree completely"). All the 49 predictors were measured by Likert-type items: statements regarding specific aspects of the mall, ready to be assessed on 7-point subscales (anchored by "not agree at all" and "agree completely"). The frequency of visit was measured on a five points ordinal scale, from "never or hardly ever" to "once a week or more". The questionnaire also included a few fields for a respondent's particulars including gender, age and domicile. Also added to the procedure was a separate questionnaire of personal values based on Max Scheler's philosophy and conceptualization developed by Brzozowski (1995). However, as it is not in the scope of this report, it will not be presented in detail.

The hypothetical outcome variable: attractiveness.

As already mentioned, attractiveness is understood as the capacity of an environment to be perceived in a way that induces positive emotions, positive cognitive appraisal, and capacity to encourage people to approach or enter.

Therefore it was assumed that attractiveness has three implicit aspects: cognitive appraisal, emotional impact and attraction force (reflected by people's "voting with their feet" – frequency of visit in a particular mall). Three indexes were developed in order to measure them, hypothetically reflecting the above-mentioned constructs: six-item cognitive and two-item emotional assessment as well as frequency of visit index (see Table 9 for detailed list of related questions).

The cognitive dimension was measured by answers to questions about the participants' judgments concerning how a particular mall fulfills their needs, how good a particular shopping mall is compared to similar malls, and its potential recommendation to the participant's relatives.

Emotional impact of a particular shopping mall was measured by answers to questions about how much a participant liked the mall and how emotionally close the mall was to the participant.

The attracting force was measured by the ordinal frequency of visits scale to a particular mall (how often does the participant visit a particular mall).

The final outcome variable – attractiveness – was hypothesized to be an unobserved endogenous variable reflected by the observed appraisal (including emotional & cognitive assessment), and the frequency of visit to a particular mall.

The hypothetical predictor variables: indexes of specific features of a mall

In order to capture the potential predictors of mall attractiveness, eight hypothetical perception indexes of specific features of a mall's environment were developed. Particular measures were inspired mainly by the works of El Hedhli (2013).

Each index hypothetically reflected its relevant concept: aesthetics, atmosphere, convenience, commercial capability, layout, leisure potential, perceived safety, and social positioning. The complete list of hypothesized indexes and their respective items are presented in Table 1.

Table 1. *Expected Measures Of Predictor Variables.*

Feature		Statement assessed by participants
Aesthetics		This mall is aesthetic
		This mall is ugly*
Atmosphere		I like the atmosphere in this mall
		There is friendly staff in this mall
		This mall is boring*
		This mall is cosy
		This mall is overcrowded *
		This mall is full of commotion*
		This mall is oppressive*
		This mall radiates a positive atmosphere
	†	The restrooms in this mall are overcrowded*
Commerce		I rate the quality of the service in this mall as high
		Merchandise in this mall is usually up-to-date
		Most of the products found in this mall are well-known brands
		Most of the shops in this mall carry new style products
		Most of the shops provide high quality merchandise
		Quality of merchandise in this mall is rather low*
		Shops in this mall are well stocked
		Shops in this mall provide an accurate assortment of products
		People who work at this mall are courteous
		There are good brands present in this mall
		There are enough stores in this mall
	†	Most of the products in this mall have a great value for money
	†	Most of the stores in this mall have good sales

	†	This mall lacks specialized shops*
Convenience	†	Parking in this mall is easy
	†	The opening hours of this mall are fine
	†	The restrooms are easily accessible in this mall
	†	There is a problem with parking *
	†	This mall is close to my home
	†	This mall is near my workplace
Layout		It's easy to move around this shopping mall
		This mall is chaotic*
		This mall is designed clearly
		This mall is legible
		This mall is simple
		This mall is spacious
		This mall is well planned architecturally
	†	This mall is big
	†	The restrooms are well designed in this mall
Leisure		I enjoy visiting this mall as if it were good entertainment
		There are a lot of entertainment facilities in this mall
		This mall is great when it comes to entertainment
	†	Restaurants in this mall (including fast food) are good
	†	There are good cafés in this mall
Safety		I think people feel safe in this mall
		This mall is a safe place
Social positioning		I can identify myself with people who shop in this mall
		People who shop in this mall are somehow similar to me

Note. The statements were assessed by participants on seven-item Likert type positions. Twenty-eight items were finally used in modelling after verification of the measurement model.

† items excluded on the basis of the initial correlation matrix analysis prior to principal component analysis

* inversed measures

Aesthetics

Aesthetics was defined as a judgment with beauty and ugliness as central paradigms (Zangwill, 2013). Hypothetical indicators of the construct were answers to questions related explicitly to aesthetics of a particular mall and its ugliness.

Atmosphere

Atmosphere was defined as a holistic cognitive-emotional impression and multisensory judgment, immediate experience of many factors (material architectural qualities such as materials, proportions, rhythms, coloring as well as temperature, light, scent, sound, harmony, other people being present, etc.), leading to induce a specific mood (Havik et al., 2013). Concept indicators were answers to questions related explicitly to a mall's atmospheric assessment (e.g. "I like its atmosphere and great ambiance"), crowding, commotion, employee assessment and what kind of mood the mall ultimately induces.

Commercial capability

This was defined as the effect of people's assessment in its actual tenant-mix (excepting entertainment establishments, restaurants and cafes), availability of desirable merchandise, customer service quality, impressions on value for price ratio and image of existing brands. The concept was indicated by using tenant, brand and product range related questions.

Convenience

Convenience is a concept related to reducing a shopping mall's visitor stress generated by the desire to find particular amenities, products and services easily (Wagner, 2007); it is also related to the physical distance from shoppers' homes or workplaces and the mall's general accessibility (El Hedhli et al., 2013; Singh & Prashar, 2013). Indicators of convenience consisted in answers to questions related to a mall's closeness to a participant's home, its general accessibility (in the context of physical localization), car park assessment, toilet availability, how easy it is to find products, and the mall's opening hours.

Layout

Layout is related to a visitor's mental reflection of a mall's general clarity: legibility, spatial order, and overall spatial design quality. Concept indicators were answers to questions about a particular mall's above-mentioned features.

Leisure potential

Leisure potential is a concept reflecting an assessment of a mall's amenities serving visitors' various needs; starting from hedonic, such as good entertainment (Arnold & Reynolds, 2003), through the need to eat and drink and ultimately to meeting friends, sitting and looking around. The hypothetical importance of leisure to shopping venue attractiveness was demonstrated by many researchers. For example, Sit, Merrilees and Birch (2003)

discovered that amenities related to leisure and entertainment were critical to shopping mall image. El-Adly (2007) revealed that entertainment was the second of six significant mall attractiveness factors. Entertainment oriented shoppers are probably younger, and more likely to be visiting shopping malls as a family compared to all other groups of shoppers (Haynes & Talpade, 1996). The newest findings by Swamynathan, Mansurali, and Chandrasekhar (2013) revealed that entertainment in malls was one of the most important factors which triggered so-called "mall mania" among Indian customers (as the authors noted: "... their preference towards the mall is spreading like a mania", p.37).

Leisure was indicated by answers to questions about experiences of cafés and restaurants in the mall, entertainment facilities, and whether the mall was a good place to hang out and to have a good time with friends.

Perceived safety

A dictionary definition of safety was used: the state of being safe – although subjectivity of this state was emphasized. It was diagnosed by two questions: whether a particular mall was a place where the participant felt safe, and whether he or she thinks other people perceive the mall as a safe place.

Social positioning

Social positioning of a particular shopping mall was formed by a mall visitor's general impression about people who usually visit the mall, predictions about who can be expected there and to what extent these people were similar to the person surveyed. Concept indicators constituted answers to questions about the impressions people had when visiting the mall and the level of a participant's self-identification with them.

The assessed shopping malls

I investigated six relatively new shopping malls. They were all located around the center of Wroclaw, Poland – one to three kilometers from the market square, the city hall, and the city's historic center. Three were chosen in 2011as the most popular Christmas shopping destinations in Wroclaw (eGospodarka.pl, 2011). While all six are modern shopping centers, with each featuring over 100 stores and services as well as a large number of parking places (see Appendix A, Table A1), they differ in design and origins. These significant differences between evaluated malls were clearly perceived by participants and captured during this study, but as they are not within the scope of this report, only a simple comparison based on measures used in this study is briefly presented in Appendix A (Table A2).

Results

Verification of Measurement Model
Outcome indicators

It was assumed that attractiveness, a latent variable, loads three observed variables (indexes) – two appraisal indexes (cognitive and emotional dimensions), and the attraction force index measured by frequency of visits to the mall (five-point ordinal scale item).

The appraisal – principal component analysis and factorial index

To verify the above-mentioned assumption, a principal component analysis – including eight items expected to measure two dimensions of the appraisal (see Table 9) – was performed first. The Kaiser-Meyer-Olkin measure of sampling adequacy for the analysis was .92 (i.e. "superb", according to Field, 2009), and all KMO values for individual items were > .90, which is extremely good (Field, 2009; Bedyńska & Cypryańska, 2013). The Bartlett test of sphericity $\chi^2(28) = 1540.48$, $p < .001$ indicated that correlations between items were sufficiently large for PCA. The analysis revealed that one component had an eigenvalue over Kaiser's criterion of 1 and it explained 58% of the variance. It definitely appeared that the appraisal was a one-dimensional index.

In order to fine-tune the measure, two items poorly correlated with other variables forming the index (extracted communalities below .05) were removed, as shown in Table 9. Such adjustment improved the explained variance. The six-item, one-dimensional index accounted for 65% of variance. The index reliability was excellent (α = .89). The factorial appraisal index (APP) was formed using factor score coefficients.

Attractiveness – a model of the central latent variable

As mentioned earlier, attractiveness was assumed to be a latent variable loading appraisal and frequency of visit. The structural equation modeling was performed to check whether such a hypothesis would meet the actual data. The model showed a great fit to the data: $\chi^2 = 21.16$, $df = 13$, $p = .06$; CMIN / DF = 1.62 and RMSEA = .04, $p = .66$. Hence, attractiveness was indeed captured by two measures: both appraisal index (six items, one-dimensional, factorial) and frequency of visit index (one item, ordinal scale), moderately correlated with each other ($r_s = .47$ $p < .001$).

The predictors

The theoretical and empirical background support the hypothesis that there are at least eight predictors of the shopping mall attractiveness: aesthetics, atmosphere, convenience, commercial capability, layout, leisure potential, perceived safety, and mall-specific social positioning. The complete list of 49 items expected to measure these features of the mall are listed in Table 1. To verify the above-mentioned theoretical assumption about the presence of eight coherent potential predictors, and to check whether all the items were adequate to the respective dimensions, three fundamental steps have been

taken: correlation matrix analysis, principal component analysis, and factorial structure development. Finally, proper items were assigned to verified constructs, and relevant factorial indexes were created.

The initial analysis of correlation matrix

A correlation matrix for all items was generated. Due to skew distributions of the results, Spearman's rho was used. Items which correlate at the minimum $r_s = .40$ with at least one rest item were included in further analysis. According to Field (2009), as a rule of thumb, the item should be included in factor analysis when it correlates with other items having at least $r = .30$. I tightened this rule in my study and only stronger relationships were accepted, within the threshold for "moderate" correlation according to Dancey and Reidy (2011).

Fourteen items were excluded. They are indicated in Table 1. All the items theoretically measuring shopping mall "convenience" turned out highly irrelevant, along with a few items potentially measuring commercial capability and restroom assessment.

Principal component analysis – assessing the multidimensional mall features

Principal component analysis was performed on 35 items. The Kaiser-Meyer-Olkin measure of sampling adequacy was .91 ("superb" according to Field, 2009; and "very high" according to Bedyńska and Cypryańska, 2013), and all KMO values for individual items were $> .67$, which is above the acceptable .50 limit (Field, 2009, Bedyńska and Cypryańska, 2013). The Bartlett test of sphericity $\chi^2(595) = 7090.21$, $p < .001$ indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Seven components had eigenvalues over Kaiser's criterion of 1 and in combination explained 63% of the variance. The statistics seemed sound and as seven components were accepted for further considerations, even if a result was contradictory to presumptions about the number of the shopping mall attractiveness predictors emerging from the literature review.

Principal axis factoring – factorial development of a mall's structure features

The best way to obtain a high relationship between factors and items when the results are not distributed normally is to use principal axis factoring (Bedyńska and Cypryańska, 2013). This method along with oblique rotation (promax) was used as the factors underlying measured malls' features could be theoretically correlated.

The factorial structure seemed reasonable except for seven items which were loaded between λ .40 and .50 (see Table 2); this means that less than 25% of individual variance was uniquely explained by the related factor. Although Field (2009) recommends a $\lambda = .40$ threshold to consider leaving the items in the structure, in this study it was tightened, particularly because all the items were also simultaneously loaded by more than one factor (see the structure matrix in Table 3). As a result, seven items were removed from the model.

Table 2. *Initial Factorial Structure Of Malls' Features. Pattern Matrix[a].*

	Factor						
	1	2	3	4	5	6	7
There are good brands present in this mall	**.77**	.06	-.06	.01	.04	.07	.07
Most of the products found in this mall are well-known brands	**.73**	.05	-.15	.10	.04	.02	-.06
Merchandise in this mall is usually up-to-date	**.69**	.00	.17	.01	.01	-.06	-.14
Most of the shops provide high quality merchandise	**.66**	-.01	-.06	-.08	.09	.30	.06
Most of the shops in this mall carry new style products	**.62**	-.03	.30	-.04	-.17	-.16	.08
Shops in this mall are well stocked	**.55**	.00	-.02	.03	.21	-.10	.00
† Quality of merchandise in this mall is rather low*	**.41**	.01	-.01	-.03	.15	.33	-.09
† Shops in this mall provide an accurate assortment of products	**.32**	.00	.29	.09	-.01	-.17	.10
This mall is simple	.05	**.97**	-.32	.06	-.04	-.21	.04
This mall is legible	.10	**.70**	.12	.04	-.02	-.06	-.06
It's easy to move around this shopping mall	-.02	**.60**	.27	-.03	.04	-.02	-.04
This mall is chaotic*	.07	**.59**	.08	-.02	-.12	.24	-.03
This mall is designed clearly	-.16	**.58**	.15	-.17	.11	.02	.18
This mall is ugly*	.11	.05	**.73**	-.01	-.15	.17	-.09
This mall is boring*	.07	-.05	**.69**	.18	-.18	-.11	.00
This mall radiates a positive atmosphere	-.03	-.02	**.68**	.19	.09	-.01	-.05
I like the atmosphere in this mall	-.02	.12	**.62**	.23	.03	-.08	.04
This mall is cosy	-.14	.13	**.62**	.05	.14	-.05	-.05
This mall is oppressive*	-.08	.08	**.61**	.19	.00	.27	-.08
† This mall is well planned architecturally	.05	.35	**.49**	-.07	.07	-.09	-.10
† This mall is aesthetic	.14	.16	**.44**	-.19	.08	.14	.07
† This mall is spacious	-.08	.11	**.31**	-.19	.15	.11	.23
People who shop in this mall are somehow similar to me	-.07	-.09	.13	**.66**	.12	.03	.05
I can identify myself with the people who shop at this mall	.12	-.02	.04	**.56**	.05	-.01	-.02
† I enjoy visiting this mall as it was a good entertainment	.08	.05	.11	**.48**	-.02	.03	.19
The people who work at this mall are courteous	.15	.00	-.12	-.01	**.80**	-.08	-.07
There is friendly staff in this mall	.22	-.09	-.09	.01	**.68**	-.08	.06
This mall is a safe place	-.06	.14	.09	.09	**.62**	.03	-.04
I rate the quality of the service in this mall as high	.23	-.04	-.01	.05	**.54**	.04	.05
I think people feel safe in this mall	-.04	.06	.12	.10	**.52**	.04	.00
This mall is overcrowded *	-.03	-.12	-.01	-.07	-.01	**.81**	.15
This mall is full of commotion*	.05	-.02	.10	.10	-.06	**.70**	-.01
† There is enough of stores in this mall	.20	-.13	.35	-.13	.04	-.42	.21
There is a lot of entertainment facilities in this mall	.00	-.01	-.07	.01	.01	.05	**.77**
This mall is great when it comes to entertainment	-.02	.09	-.07	.31	-.08	.10	**.72**

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.

† items removed from further analysis due to low factor loading (variance explained by unique factor) and equivocality. * inversed measures.

[a] Rotation converged in 12 iterations.

Table 3. *Initial Factorial Structure Of Malls' Features. Structure Matrix[a].*

	Factor						
	1	2	3	4	5	6	7
There are good brands present in this mall	.81	.32	.50	.22	.55	.16	.35
Merchandise in this mall is usually up-to-date	.74	.28	.50	.20	.48	.04	.20
Most of the shops provide high quality merchandise	.71	.30	.41	.09	.55	.36	.25
Most of the shops in this mall carry new style products	.69	.23	.53	.23	.33	-.12	.39
Most of the products found in this mall are well-known brands	.68	.21	.34	.20	.44	.08	.20
Shops in this mall are well stocked	.67	.22	.40	.19	.51	.00	.26
† Shops in this mall provide an accurate assortment of products	.52	.26	.51	.32	.35	-.09	.38
† Quality of merchandise in this mall is rather low*	.49	.30	.33	.07	.47	.41	.07
This mall is legible	.35	.77	.59	.26	.41	.22	.19
It's easy to move around this shopping mall	.32	.76	.64	.23	.45	.27	.20
This mall is simple	.16	.71	.32	.17	.24	.07	.14
This mall is chaotic*	.23	.69	.47	.15	.31	.45	.11
This mall is designed clearly	.20	.68	.51	.10	.40	.27	.28
I like the atmosphere in this mall	.45	.56	.81	.55	.46	.09	.44
This mall radiates a positive atmosphere	.43	.48	.75	.47	.46	.14	.33
This mall is ugly*	.43	.53	.73	.30	.38	.31	.24
This mall is oppressive*	.33	.57	.71	.43	.42	.42	.24
† This mall is cosy	.33	.54	.69	.33	.45	.16	.27
† This mall is well planned architecturally	.42	.64	.69	.22	.48	.16	.21
This mall is boring*	.38	.34	.65	.46	.23	-.03	.36
† This mall is aesthetic	.49	.55	.65	.13	.52	.32	.29
† This mall is spacious	.28	.40	.47	.08	.39	.24	.33
People who shop in this mall are somehow similar to me	.22	.21	.41	.71	.25	.06	.34
† I enjoy visiting this mall as it was good entertainment	.33	.30	.48	.63	.26	.07	.45
I can identify myself with the people who shop at this mall	.29	.20	.37	.60	.23	.02	.27
The people who work at this mall are courteous	.54	.30	.36	.09	.78	.14	.14
There is friendly staff in this mall	.58	.24	.39	.15	.72	.08	.27
This mall is a safe place	.42	.49	.52	.25	.71	.27	.20
I rate the quality of the service in this mall as high	.57	.31	.44	.20	.69	.20	.27
I think people feel safe in this mall	.39	.41	.48	.25	.62	.23	.22
This mall is overcrowded *	.03	.17	.09	-.04	.18	.75	.04
This mall is full of commotion*	.14	.31	.26	.14	.24	.70	.03
This mall is great when it comes to entertainment	.26	.26	.41	.56	.19	.06	.79
There are a lot of entertainment facilities in this mall	.25	.13	.29	.27	.18	.00	.74
† There are enough stores in this mall	.40	.04	.36	.13	.21	-.38	.40

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.

† items removed from further analysis due to low factor loading (variance explained by unique factor) and equivocality. * inversed measures.

[a]. Rotation converged in 12 iterations.

After the factorial model modification (.90 KMO), the Bartlett test of sphericity $\chi^2(378) = 5475.35$, $p < .001$ and all KMO values for individual items were $> .74$. Seven factors explained 57% of total variance and were inter-correlated (see Table 6). This structure seemed reasonable (see Table 4 and 5); hence the model was accepted and seven reliable factorial indexes were formed: atmosphere (ATM), commerce (COM), entertainment (ENT), human resources & safety (HRS), layout (LAY), stressors (STR), and social positioning (SOC) (see Tables 8 and 9 for the list of indexes along with their respective reliability coefficients and other descriptive statistics as well as related items), based on obtained factor score coefficients (see Table 7).

Table 4. *Final Factorial Structure Of Malls' Features. Pattern Matrix[a].*

	Factor						
	1	2	3	4	5	6	7
Merchandise in this mall is usually up-to-date	**.75**	.15	-.02	-.01	-.09	-.12	.01
There are good brands present in this mall	**.71**	-.05	.04	.09	.08	.09	-.02
Most of the shops in this mall carry new style products	**.70**	.14	.03	-.17	-.13	.05	.06
Most of the products found in this mall are well-known brands	**.67**	-.07	-.02	.08	.03	-.02	.02
Most of the shops provide high quality merchandise	**.61**	.04	-.08	.13	.25	.09	-.19
Shops in this mall are well stocked	**.55**	.00	-.01	.22	-.08	.01	.00
This mall radiates a positive atmosphere	-.01	**.90**	-.15	.10	-.07	.04	-.08
I like the atmosphere in this mall	.02	**.72**	.06	.04	-.11	.09	.05
This mall is cosy	-.09	**.71**	.09	.15	-.09	.00	-.11
This mall is boring*	.15	**.67**	-.03	-.18	-.13	.03	.11
This mall is oppressive*	-.06	**.63**	.08	.01	.27	-.07	.08
This mall is ugly*	.20	**.56**	.11	-.13	.15	-.10	.03
This mall is simple	-.03	-.21	**.90**	.00	-.17	.06	.00
This mall is legible	.07	.13	**.67**	.01	-.06	-.03	.01
This mall is designed clearly	-.08	.03	**.64**	.10	.03	.08	-.05
This mall is chaotic*	.04	.00	**.63**	-.08	.25	-.04	.00
It's easy to move around this shopping mall	.00	.21	**.60**	.06	.02	-.05	-.02
People who work at this mall are courteous	.17	-.12	.04	**.75**	-.07	-.10	.04
There is friendly staff in this mall	.25	-.16	-.02	**.63**	-.05	.03	.12
This mall is a safe place	-.09	.24	.08	**.61**	.03	-.01	-.03
I rate the quality of the service in this mall as high	.23	-.01	-.01	**.53**	.05	.03	.05
I think people feel safe in this mall	-.06	.25	.02	**.51**	.04	.02	-.01
This mall is overcrowded *	-.05	-.14	-.06	.01	**.86**	.08	-.04
This mall is full of commotion*	.03	.01	.02	-.05	**.72**	-.06	.11
This mall is great when it comes to entertainment	-.02	.06	.07	-.08	.04	**.77**	.14
There are a lot of entertainment facilities in this mall	.05	.00	.00	.00	.00	**.76**	-.09
I can identify myself with people who shop in this mall	.07	-.09	.03	.04	.03	-.04	**.79**
People who shop in this mall are somehow similar to me	-.14	.18	-.10	.12	.05	.07	**.62**
Eigenvalues	9.29	2.67	2.05	1.58	1.21	1.18	.97
% of variance	33.20	9.56	7.34	5.66	4.33	4.22	3.44

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.

* inversed measures.

[a] Rotation converged in 12 iterations.

Table 5. *Final Factorial Structure Of Malls' Features. Structure Matrix[a].*

	Factor						
	1	2	3	4	5	6	7
There are good brands present in this mall	**.79**	.44	.33	.55	.24	.30	.25
Merchandise in this mall is usually up-to-date	**.77**	.44	.28	.45	.07	.15	.27
Most of the shops in this mall carry new style products	**.69**	.44	.27	.31	.01	.29	.35
Most of the shops provide high quality merchandise	**.69**	.38	.28	.54	.38	.24	.08
Most of the products found in this mall are well-known brands	**.68**	.31	.21	.44	.14	.18	.20
Shops in this mall are well stocked	**.66**	.35	.25	.52	.08	.21	.22
I like the atmosphere in this mall	.47	**.82**	.57	.42	.19	.41	.49
This mall radiates a positive atmosphere	.44	**.80**	.46	.43	.22	.34	.39
This mall is oppressive*	.34	**.76**	.59	.39	.50	.22	.39
This mall is cosy	.34	**.71**	.54	.42	.21	.25	.28
This mall is ugly*	.45	**.70**	.54	.33	.36	.18	.35
This mall is boring*	.39	**.66**	.38	.20	.06	.32	.46
It's easy to move around this shopping mall	.34	.62	**.77**	.41	.33	.15	.23
This mall is legible	.36	.60	**.77**	.38	.25	.17	.26
This mall is simple	.16	.35	**.70**	.23	.09	.13	.13
This mall is chaotic*	.24	.48	**.70**	.28	.47	.10	.15
This mall is designed clearly	.23	.48	**.68**	.35	.29	.19	.15
People who work at this mall are courteous	.54	.31	.30	**.78**	.16	.09	.16
There is friendly staff in this mall	.58	.32	.25	**.72**	.14	.22	.26
This mall is a safe place	.42	.53	.47	**.71**	.31	.20	.21
I rate the quality of the service in this mall as high	.56	.40	.32	**.68**	.25	.23	.24
I think people feel safe in this mall	.39	.49	.40	**.62**	.28	.21	.22
This mall is overcrowded *	.03	.11	.16	.17	**.79**	.06	-.07
This mall is full of commotion*	.16	.30	.30	.22	**.72**	.06	.13
This mall is great when it comes to entertainment	.27	.44	.27	.18	.14	**.84**	.48
There are a lot of entertainment facilities in this mall	.25	.27	.14	.18	.07	**.74**	.24
I can identify myself with people who shop in this mall	.31	.39	.21	.22	.07	.29	**.77**
People who shop in this mall are somehow similar to me	.22	.46	.21	.24	.12	.37	**.70**
Eigenvalues	9.29	2.67	2.05	1.58	1.21	1.18	.97
% of variance	33.20	9.56	7.34	5.66	4.33	4.22	3.44

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.

* inversed measures.

[a] Rotation converged in 12 iterations.

Table 6. *Factor Correlation Matrix.*

Factor	1	2	3	4	5	6
1 COM						
2 ATM	.51					
3 LAY	.34	.67				
4 HRS	.59	.47	.42			
5 STR	.17	.34	.36	.31		
6 ENT	.29	.38	.19	.22	$.08^{ns}$	
7 SOC	.32	.51	.25	.20	$.05^{ns}$	.40

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.

ATM = atmosphere; COM = commerce; ENT = entertainment; HRS = human resources & safety; LAY = layout; SOC = social positioning; STR = stressors: noise and crowding.

All correlations are significant at $p < .001$, except those marked as *ns*.

Table 7. *Factor Score Coefficient Matrix.*

	Factor						
	1	2	3	4	5	6	7
This mall is cosy	-.02	**.13**	.05	.05	.00	.01	-.04
This mall is ugly*	.05	**.12**	.05	-.04	.07	-.05	.03
This mall is boring*	.03	**.11**	.00	-.07	-.05	.00	.07
I like the atmosphere in this mall	.02	**.21**	.05	.01	-.06	.06	.09
This mall radiates a positive atmosphere	-.01	**.21**	-.04	.04	-.01	.03	-.02
This mall is oppressive*	-.01	**.18**	.06	.00	.17	-.05	.07
Shops in this mall are well stocked	**.12**	.00	.00	.06	-.03	.00	.00
Most of the shops provide high quality merchandise	**.16**	.01	-.02	.05	.12	.04	-.11
Most of the shops in this mall carry new style products	**.18**	.03	.01	-.07	-.07	.03	.06
Merchandise in this mall is usually up-to-date	**.23**	.04	.00	-.01	-.04	-.04	.02
Most of the products found in this mall are well-known brands	**.14**	-.01	-.01	.02	.01	-.01	.01
There are good brands present in this mall	**.24**	-.01	.01	.04	.04	.06	-.01
There are a lot of entertainment facilities in this mall	.01	.00	-.01	.02	-.01	**.32**	-.04
This mall is great when it comes to entertainment	.01	.04	.02	-.03	.01	**.60**	.16
There is friendly staff in this mall	.06	-.03	-.01	**.21**	-.02	.01	.04
I rate the quality of the service in this mall as high	.05	-.01	.00	**.15**	.03	.00	.00
People who work at this mall are courteous	.05	-.03	.01	**.31**	-.02	-.03	.01
I think people feel safe in this mall	-.01	.04	.02	**.13**	.02	.02	.00
This mall is a safe place	-.03	.05	.03	**.24**	.04	.02	-.02
This mall is simple	-.01	-.03	**.25**	.00	-.05	.00	-.01
This mall is chaotic*	.01	.03	**.19**	-.02	.11	-.03	-.01
This mall is designed clearly	-.02	.02	**.16**	.04	.03	.03	-.03
This mall is legible	.01	.04	**.23**	.00	.00	-.03	.00
It's easy to move around this shopping mall	.00	.06	**.21**	.02	.03	-.04	-.01
I can identify myself with people who shop at this mall	.03	.01	.00	-.01	-.01	.01	**.48**
People who shop in this mall are somehow similar to me	-.03	.05	-.03	.02	.02	.03	**.31**
This mall is noisy*	.01	.02	.02	-.01	.28	**-.04**	.04
This mall is crowded*	-.02	-.02	-.01	.04	.48	**.03**	-.07

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization.

* inversed measures.

Table 8. *Final Measures of Predictor Variables.*

Index[a]	Items in questionnaire	R^2	R_{CC}	α	M	SD	R_g
ATM				.88	26.00	6.40	1.33
	This mall is cosy	.46	.65				
	This mall is ugly*	.43	.64				
	This mall is boring*	.39	.60				
	I like the atmosphere in this mall	.61	.75				
	This mall radiates a positive atmosphere	.58	.72				
	This mall is oppressive*	.49	.69				
COM				.86	29.90	4.50	.27
	Shops in this mall are well stocked	.41	.61				
	Most of the shops provide high quality merchandise	.48	.63				
	Most of the shops in this mall carry new style products	.41	.59				
	Merchandise in this mall is usually up-to-date	.52	.70				
	Most of the products found in this mall are well-known brands	.42	.64				
	There are good brands present in this mall	.56	.73				
ENT				.76	6.90	2.30	.34
	There are a lot of entertainment facilities in this mall	.38	.61				
	This mall is great when it comes to entertainment	.38	.61				
HRS				.83	24.30	3.60	.11
	There is friendly staff in this mall	.51	.64				
	I rate the quality of the service in this mall as high	.41	.60				
	The people who work at this mall are courteous	.54	.67				
	I think people feel safe in this mall	.49	.57				
	This mall is a safe place	.54	.65				
LAY				.84	23.00	5.00	.23
	This mall is simple	.37	.60				
	This mall is chaotic*	.37	.61				
	This mall is designed clearly	.39	.61				
	This mall is legible	.50	.69				
	It's easy to move around this shopping mall	.48	.68				
SOC				.71	6.18	2.46	.00
	I can identify myself with people who shop in this mall	.30	.55				
	People who shop in this mall are somehow similar to me	.30	.55				
STR				.72	8.20	2.70	.34
	This mall is overcrowded *	.31	.59				
	This mall is full of commotion*	.31	.59				

Note. N = 384. ATM = atmosphere; COM = commerce; ENT = entertainment; HRS = human resources and safety; LAY = Layout; SOC = Social positioning; STR = Stressors; * inversed measures

M = mean; SD = standard deviation; R_g = item means range; R^2 = squared multiple correlation; R_{CC} = corrected item-total correlation (item-rest correlations); α = Cronbach's alpha.

[a] the reflective composite indexes based on relevant factors scores (a linear combinations of all the variables in the analysis for each index) was used in SEM.

Table 9. *Measures Of Outcome Variables.*

Index	Items in questionnaire	R^2	R_{CC}	α	M	SD	R_g
ATT							
APP[a]				.89	23.83	7.79	2.38
	I generally like this mall	.63	.79				
	This mall fulfills most of my needs	.60	.77				
	I recommend this mall to my friends	.57	.75				
	This mall is a good one, compared to similar malls that I know	.50	.70				
	I'm very fond of this mall	.49	.68				
	I can do all needful shopping in this mall	.38	.60				
†	I often come to this mall to meet my friends						
†	Visiting this mall somehow improves my quality of life						
FRQ					3^{mdn}	3^{mod}	
	How often do you come to this mall?						

Note. N = 384. ATT = mall attractiveness; APP = appraisal; FRQ = frequency of visit.

M = mean; mdn = median; mod = mode; SD = standard deviation; R^2 = squared multiple correlation; R_{CC} = corrected item-total correlation (item-rest correlations); α = Cronbach's alpha; R_g = item means range;

† items removed from analysis (negatively passed the verification of measurement model due to low communalities).

[a] the reflective composite index based on relevant factor scores (a linear combination of all the variables) was used in SEM.

Aesthetics – merged into the atmosphere

Factor analysis revealed that aesthetics was probably not an independent shopping mall dimension. One item measuring general aesthetics had to be excluded from the analysis as it was weakly and equivocally loaded by more than one factor. The second item, measuring "ugliness" of a shopping mall, turned out to be loaded high by the atmosphere (λ= .73). This phenomena is not surprising in the light of some theoretical atmospheric concepts, (e.g. Kotler's [1973]), which posits an inextricable connection between aesthetics and atmosphere as a superordinate concept.

Atmosphere – stressors and staff-related items detached

The hypothesized measures of atmosphere (ATM) turned out close to the factorial solution except for three substantial exclusions. First, it turned out that commotion and crowding have been highly loaded by a unique factor, clearly distinct from the atmosphere. Those items were excluded and form a separate factorial stressors (STR) index.

Second, the factorial solution showed that staff friendliness has been loaded by a unique factor, distinct from the atmosphere. It loaded also two staff-related items from the hypothesized measures of commerce and two items expected to measure perceived mall safety. Hence, the item was moved to the new factorial index of human resources and safety (HRS).

Commerce – staff-related items detached

Items expected to measure commercial functioning (COM) turned out to be coherently loaded by a unique factor. However, six of the initial 13 items were removed prior to accepting the final factorial solution due to low relationships with other measures or weak loadings by the COM factor. There were also two staff-related items described above in the atmosphere section which were moved to a new HRS factorial index.

Convenience – completely excluded from further analysis

Shopping mall convenience was supposed to be measured by a homogeneous index consisting of six items. Surprisingly, none of them correlated significantly with any other shopping mall features. Consequently, it was removed from further analysis and not included in either the PCA, principal axis factoring or SEM.

Layout – almost perfect index

The shopping mall layout (LAY) turned out to be measured mostly by the expected items. After removing four items from the initial pool the remaining five-item index achieved a satisfactory reliability.

Leisure – limited to the shopping mall's entertainment capability

Leisure (LEI) was to be indicated by five items measuring perceived entertainment capability, cafés, restaurants and the mall's potential as a place for meeting friends and having good spare time. Principal axis factoring revealed the index is one-dimensional as hypothesized, but only two of the five items were reliable measures. These were items related to the shopping mall's general entertaining capability; hence a factorial entertainment index (ENT) instead of the broader "leisure" was formed.

Safety – inevitably related to human resources

Safety had to be measured by two items related directly to the participant's perception of safety in a particular shopping mall. As principle axis factoring revealed, these two items were indeed loaded by a unique factor, but the factor loaded even higher three staff-related items (namely: "it has a friendly staff", "people who work at this mall are courteous" and "I rate the quality of the mall's service high"). The loading of the courtesy-related item was actually the highest of all ($\lambda = .75$). A reliable factorial index was thus created and consequently described as human resources & safety (HRS).

Social positioning. No changes to the initial measurement

The items hypothesized to measure social positioning turned out as a coherent measure loaded uniquely, and by a relatively high distinct factor (SOC).

Reliability and intercorrelations of final measures

If eight indexes had been built (the seven above-mentioned predictors and an index of appraisal mentioned in the "outcome" section earlier) based on summative or averaged scores obtained from the appropriate items, the measures would have been internally consistent and reliable (see Table 8 and 9). Cronbach's α would have been higher than or equal to the recommended minimum of .70 (Kline, 2000) for each measure. Item-rest correlations in the majority of the indexes could have been much above the .30 threshold suggested by Field (2009), and none below. Some indexes could have been significantly intercorrelated. Such correlations could have varied from $r_s = .16$, $p < .001$ to $r_s = .60$, $p < .001$ and thus be nearly identical to the factor correlation matrix (see Table 6, except that it contains Pearson correlation coefficients whereas the hypothetical variables built on means or summations wouldn't be normally distributed; so the correlations should have been computed using Spearman Rho).

However, to build a statistically accurate and highly parsimonious model of shopping mall attractiveness, factorial indexes instead of summative or averaged index scores were built and used. The factorial indexes (seven predictors and the shopping mall appraisal index) were built on linear combinations of all the variables in the analysis based on their factor scores (see Table 7), rather than on the commonly used method of creating the measures by simply combining only the variables which "define" the respective factor. Thanks to this decision the uncorrelated predictors for modeling (see Table B1), albeit almost perfectly correlated with their "classic" counterparts based on averaged item scores (see Table B2), were obtained.

Shopping mall attractiveness in structural equation modelling (SEM)

Gender independent shopping mall attractiveness (H1 and H2)

In order to verify the first hypothesis, an asymptotic distribution free model was developed, where all seven hypothetical predictors together – observed, exogenous variables[3] – were directly related to the unobserved endogenous[4] variable: attractiveness (ATT). It loaded two observed, exogenous variables: frequency (FRQ) and appraisal (APP).

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[3] Exogenous variables in models represent the inputs tested to see if they are the cause. They are also called explanatory variables, predictor variables, or independent variables.

[4] Endogenous variables in models represent the output, tested to see if it is the effect. They are also called response variables or dependent variables.

There were 10 variables in the model then: seven observed, exogenous (indexes of a shopping mall's features), two observed endogenous (FRQ, APP) and one unobserved endogenous (ATT). No predictor in these was correlated. The only significant correlation was the one between errors of APP and FRQ. A graphic representation of the model is shown in Figure 1.
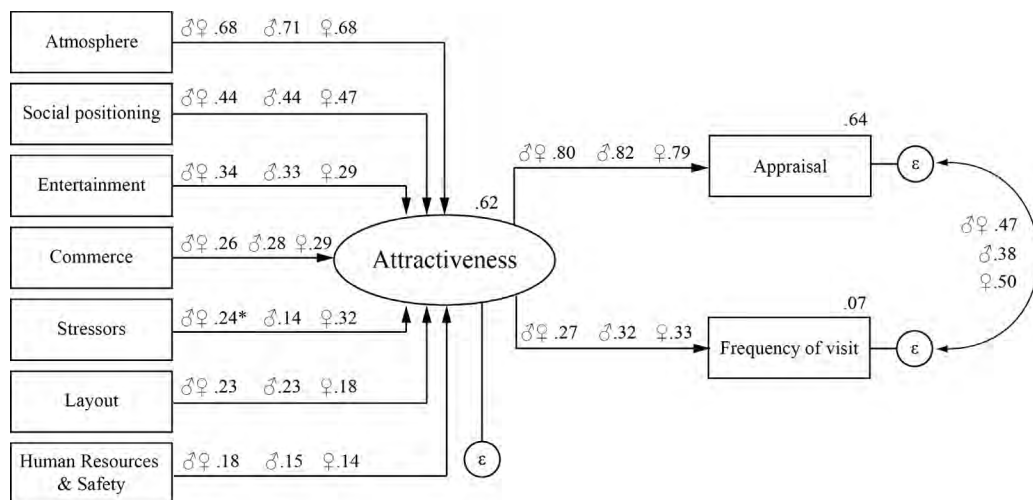
Figure 1. The path diagram of the model – attractiveness of a shopping mall.

♂♀ N = 384. χ^2 = 5.21, df = 27, p = 1; CMIN / DF =.19 and RMSEA = .00, p = 1.

♂ N = 192. χ^2 = 24.17, df = 27, p = .62; CMIN / DF = .89 and RMSEA = .00, p = .95

♀ N = 192. χ^2 = 35.13, df = 27, p = .13; CMIN / DF = 1.30 and RMSEA = .04, p = .65

* the only significant difference between women and men

CMIN / DF = minimum of discrepancy function / degrees of freedom. RMSEA = the root mean square error of approximation.

Straight single-headed arrows indicate standardized path coefficients significant at $p \leq .001$. Curved double-headed arrows indicate correlations significant at $p \leq .001$.

All of the predictors and the index of Appraisal are factorial indexes.

Such a model explained 62% of the attractiveness variance. It fit the data perfectly (χ^2 = 5.21, df = 27, p = 1; CMIN / DF =.19 and RMSEA = .00, p =1). As it turned out, all the hypothetical attractiveness predictors actually significantly affected it. For detailed information about the regression weights and variances explained, see Table 10.

Table 10. *The SEM Model: Summary of Regression Coefficients in Predicting Mall Attractiveness.*

Index	β	t	p ≤	R²
ATT <-				.62
ATM	.68	19.60	.001	
SOC	.44	11.90	.001	
ENT	.34	8.90	.001	
COM	.26	7.00	.001	
STR	.24	6.95	.001	
LAY	.23	6.60	.001	
HRS	.18	5.40	.001	
APP <- ATT	.80		.001	.64
FRQ <- ATT	.27	6.45	.001	.07

Note. N = 384. Standardized betas are reported.

ATT = shopping malls' attractiveness; COM = commerce; LAY = layout; ATM = atmosphere; HRS = human resources & safety; 5 STR = stressors: noise and crowding; ENT = entertainment; SOC = social positioning; APP = appraisal; FRQ = frequency of visit

Hypothesis 1 was partially supported accordingly. Seven of eight hypothetical predictors mentioned in the hypothesis significantly affected shopping mall attractiveness. Nevertheless the aesthetic dimension was not present explicitly in the estimation of the model as it was merged into the atmosphere through factor analysis. The atmosphere including aesthetics at most (β = .68) affected shopping mall attractiveness. The aesthetic dimension was not irrelevant then. It was only unlikely to be a unique component among a shopping mall's features. The final structure matrix in Table 4 perfectly shows how the aesthetic worked within this shopping mall "universe" (see the structural factor loadings for the item "This mall is ugly"). Convenience was the only one predictor completely excluded from consideration during the preliminary analysis of item inter-correlations. The reason for excluding it was that no expected convenience measures correlated significantly with any other measures of shopping mall features. It could mean that convenience, as a construct, is absolutely unrelated to other shopping mall features or that completely wrong hypothetical measures of it were used (since they were also absolutely not inter-correlated within the hypothetical pool).

Hypothesis 2 about all predictors being equally important to mall attractiveness was definitely not supported. The standardized regression weights of particular significant predictors varied substantially: from β = .18, p < .001 to β = .68, p < .001. The most important drivers of shopping mall attractiveness seemed to be the atmosphere and the mall's social positioning. Less important was human resources & safety (see Table 10 for details). The most interesting relationship appeared between shopping mall

attractiveness and stressors (noise and crowding in particular). It seemed that shopping mall attractiveness increased when a higher number of stressors in the mall was declared by participants. This phenomenon is reviewed later in the discussion.

Gender dependent shopping mall attractiveness (H3 and H4)

In order to check whether factors affecting shopping mall attractiveness differed according to gender, two separate models were built – one for women and one for men. The hypothesized structure of variables were identical for both genders and parallel to the gender-independent model described in section 6.3.1. The graphic representation of all three models is shown in Figure 1. Such a structure had a fit good to the data both for women and men. The good fit measures were $\chi^2 = 35.13$, $df = 27$, $p = .13$; CMIN / DF = 1.30 and RMSEA = .04, $p = .65$ for women and $\chi^2 = 24.17$, $df = 27$, $p = .62$; CMIN / DF = .89 and RMSEA = .00, $p = .95$ for men. In both cases the structure of the seven hypothesized factors driving shopping mall attractiveness explained about 62% of the variance; all seven factors significantly affected shopping mall attractiveness in both women's and men's declarations. The third hypothesis was not supported then – the set driving shopping mall attractiveness is the same in both women and men.

The hypothesized difference in hierarchy of factors affecting shopping mall attractiveness in women and men was tested in two group path analyses. The unconstrained structural model (which means that any parameter was allowed to vary between genders) fit the data very well, $\chi^2 = 59.31$, $df = 54$, $p = .28$; CMIN / DF = 1.09 and RMSEA = .01, $p = .99$. The only one significant difference between women and men was in the importance of stressors (noise and crowding); the critical ratio for difference associated with relevant regression weights was -2.6. The comparison of the very good fit between the unconstrained model mentioned above and its totally constrained variant (where all the parameters were set equal for women and men) exhibited that both models were not different: $\chi^2 difference = 23.88$, $df = 16$, $p = .09$. Moreover, the constrained model was more parsimonious and the relevant quality measures showed that the constrained variant was better ($PCFI_{cons.} = .95$ whereas $PCFI_{uncons.} = .75$). Therefore, the first gender-independent model described in section 6.3.1 might have been accepted as the well fitted and high quality model for both women and men.

Nevertheless, one substantial difference between women and men unarguably existed (the importance of stressors). Therefore the mixed model was tested – all parameters were constrained, except the one associated with stressors. Such a model fit to the data almost perfectly: $\chi^2 = 75.95$, $df = 69$, $p = .26$; CMIN / DF = 1.10 and RMSEA = .01, $p = 1$ without compromising the parsimony ($PCFI_{mixed} = .95$). Then the hypothesis about the differences in the hierarchy factors affecting shopping mall attractiveness (H4) in women's and men's declarations was accepted. Noise and crowd (stressors) was a more

important positive predictor of mall attractiveness in women's than men's declarations. For women it is even more important than commerce, layout and human resources, whereas for men noise and crowd is the least important driver. The final gender dependent model is shown in Figure 1 and the hierarchy of factors along with regression coefficients in predicting mall attractiveness in Table 11.

Table 11. *The gender dependent SEM Model: Summary of Regression Coefficients in Predicting Mall Attractiveness.*

Women			Men		
Index	β	t	Index	β	T
ATT <-			ATT <-		
ATM	.68	13.8	ATM	.71	17.46
SOC	.47	9.14	SOC	.44	7.87
STR*	.32	6.13	ENT	.33	7.25
ENT	.29	6.10	COM	.28	6.35
COM	.29	5.45	LAY	.23	6.30
LAY	.18	3.54	HRS	.15	3.61
HRS	.14	3.35	STR*	.14	2.64
APP <- ATT	.79		APP <- ATT	0.82	
FRQ <- ATT	.33	7.5	FRQ <- ATT	0.32	6.45

Note. ♂ N = 192, ♀N = 192. Standardized betas are reported. All $p \leq .001$. R^2 of the ATT is .62 in both women and men.

ATT = shopping malls' attractiveness; COM = commerce; LAY = layout; ATM = atmosphere; HRS = human resources & safety; 5 STR = stressors: noise and crowding; ENT = entertainment; SOC = social positioning; APP = appraisal; FRQ = frequency of visit

* the only significant difference between women and men

The appraisal and frequency of visits to shopping malls according to gender (H5 and H6)

The general appraisal of all evaluated shopping malls was almost the same in women and men, $F(1, 382) = .741$, $p > .05$. H5 was thus not supported. Moreover there was no significant interaction effect between the gender and particular shopping mall on a mall's general appraisal, $F(5, 372) = 1.31$, $p > .05$.

Also the frequency of visits across shopping malls was the same in women and men $\chi^2 (4) = 1.74$ $p > .05$. H6 was not supported then.

Discussion of Results

The purpose of my study was to find out what drives shopping mall attractiveness and what the very structure or hierarchy of factors is in building it. Several conclusions can be drawn from this research. First, conceptual: the results showed that shopping mall attractiveness was a two-dimensional construct, reflecting emotional-cognitive appraisal (high loading) and frequency of visits (low loading). Secondly, attractiveness appeared to be driven by (in order of importance): atmosphere, social positioning, entertainment potential, commerce, social density and noise (called "stressors" in this article), layout, and human resources along with safety. Third, gender differences were of little relevance when the attempt was made to reconstruct drivers of attractiveness shopping mall based on people's declarations (H3 was not supported, H4 was supported). It was evident that the natural drivers of attractiveness may be treated as universal for both genders, at least in samples similar to those surveyed in this study; driver hierarchy was negligibly different in women and men. Moreover, there were no gender differences either in perception of shopping mall attractiveness or in frequency of visits (H5 and H6 were not supported).

Hypothesis 1 was partially supported. All reasonably operationalized mall features verified in previous research turned out to have a direct, significant relationship to shopping mall attractiveness. They were supported partially because two main limitations to verifying hypothesis 1 occurred. First, the unexpected problem with consistent measuring a mall's convenience made it impossible to verify its very contribution to their attractiveness. Second, the operationalizing and measuring aesthetics turned out to be adequate and consistent, while it showed up as a nonspecific feature of shopping malls. Actually it was important but only within (or "via") the atmosphere – probably the most important driver of shopping mall attractiveness. Maybe this is the reason why authors of recent studies didn't expose aesthetics as a shopping mall feature explicitly, and the design or décor proved to be secondary in importance to a mall's perception. I have already mentioned this issue in the literature review. One has to remember that the features related to human resources and safety, although statistically significant, only marginally contributed to attractiveness and thus were almost irrelevant.

Hypothesis 2 was not supported. The relationship of each particular predictor to attractiveness varied significantly. The most surprising result, albeit relatively easy to explain in many ways, is the positive correlation of social density and noise (stressors in the model) to shopping mall attractiveness. The questions in the survey were related precisely to overcrowding and commotion — the phenomena commonly treated as stressors in environmental psychology, but — as demonstrated by Mehta, Sharma and Swami (Mehta, 2013; Mehta, Sharma, & Swami, 2013): in retail environments affecting the perception of retail settings in many ways (not only negatively). In the end, retail crowd-

ing is a complex percept that results from a combination of many personal, cultural, situational, and environmental factors, Mehta (2013) argued after an impressive review of the literature and theories on the subject. And it is also evident here: even if negative effects of overcrowding and commotion on human wellbeing, behavior and environmental appraisal were verified empirically many times (Bilotta & Evans, 2010), the effect of these stressors here, when shopping mall attractiveness is considered, seemed to be directly opposite. Especially in the women's sample.

The gender difference regarding crowding effects seems in line with the known results of gender-related studies on social density provided by Gifford (2007). He provided ample evidence that men respond to such density more negatively than women, manifesting mood changes, hostility, and generally more negative attitudes than women. The latter might be the case in this study, even if the high density was only recalled, not directly experienced just before or during the survey. Finally, Baker and Wakefield (2012) showed recently that perception of crowding may depend on whether the individual is a more social (hedonic) or task (utilitarian) shopper. Social shoppers positively perceive social density, and females were more likely to be social shoppers in their study (Baker & Wakefield, 2012).

It does not necessarily mean that commotion and overcrowding do not affect all mall users negatively in some way. It rather means that people, especially women, may conceptualize crowded and noisy shopping malls as attractive places, despite particular negative aspects of these stressors. Going to the mall can resemble going to a festival or social event, where crowds and noise are actually expected. Unquiet malls physically attract people to some extent. Likewise — the calmer, quieter, and more vacant a mall is, the less attractive it seems to be. It seems that people don't want to be in a more or less vacant place, especially where it is supposed to be noisy and full of other people. This is a common truth in theories of placemaking (Carmona, 2010) and was evident in this study especially in the surveyed women sample.

The positive relationship of crowding and social noise to attractiveness could be the effect of a universal human need to experience a cognitive consonance (Cooper, 2007). One can think that a good mall should be a crowded one; retail space is supposed to be noisy and full of people. If it is not, one can deduce, something may be wrong; cognitive tension appears. When we are tense, we are more prone to think "more slowly", more concretely, contemplatively and analytically (Kahneman, 2012). The answer to the implicit question "why there are so few people", followed by a detailed analysis of the "suspected" environment, could have a significant impact on general mall appraisal and the intention to visit it.

The positive effect of crowds on attractiveness could also be an echo of informational social influence (Wooten & Reed, 1998). Someone can deduce that many people going there probably means they're going to a great place, one especially worth visiting; and will therefore judge it as an attractive environment. Finally people, being definitely social species (Aronson & Aronson, 2012), could simply like the company of other people and some social noise (Gifford, 2007). Especially, when they can control the situation, namely: they can leave whenever they want. Finally, the effect of perceived crowding on an attractive retail venue may be U-shaped and moderated by the consumers' optimal stimulation level (Mehta et al., 2013).

It is also worth noting how important atmosphere. This study makes even more probable the hypothesis of the enormous importance of atmosphere to mall perception, as positively tested in numerous studies to date (Gifford, 2007) and mentioned in the literature review herein. But there is more to this study. I have offered here some basic insight into this construct's nature through the principle of axis factoring along with oblique rotation. It was demonstrated that atmosphere could not only be at least moderately correlated to various mall features (components), such as social positioning and human resources & safety, both of which seem more or less obvious. It was also shown both the enormous and inextricable relationship of an object's design-related qualities to its atmosphere. First, the atmosphere was strongly correlated to layout (which is all about architectural design). Second, the atmospheric measures turned out to be highly functionally integrated with measures of aesthetics in general and ugliness in particular.

Bearing in mind the literature review on the topic, there was another unexpected result – the relatively low importance of the commerce related factor to mall attractiveness. As I said previously, tenant-mix and related features serve as a very important driver for any shopping environment attractiveness. However, in this study, the six shopping malls shared 64% of the tenants (only 36% were unique brands, present only in one mall). Nearly a quarter of the brands were simultaneously present in four, five or six of the malls. The commercial proposition in six shopping malls could have been so closely akin that participants could not have seen any factual difference between them. Actually the commercial quality was perceived as significantly different by participants only in one shopping center – Renoma; it was different from the remaining five shopping malls, all others being equal in this dimension. This can be a fundamental reason why the tenant-related feature was not an important driver of these mall attractiveness.

The study findings - regarding the highest importance of atmosphere and social positioning to shopping mall attractiveness plus moderate entertainment capability and

weak "commercial" impact - could provide substantial data for retail and facilities management, including high-street (not limited to shopping) managers.

First of all the managers ought to think about the general ambiance of their sites for providing generally pleasant intangible experiences. It would be extremely difficult, but possible, for example, to make experimental adjustments constantly and to tweak the customer-environment fit. They would have to worry about every detail like music, scent, décor and hundreds of other, often miniscule, elements. The debate on how to do it was started forty years ago by Kotler (1973). Some recent insights on such customer experience management was provided by Schmitt (2003), Shaw & Ivens (2005) or in a very easy and feisty way by Underhill (2004).

Second, the mangers should worry about the coherence of their target audience's self-image and the atmosphere they provide for people they attract to their sites. It could be said clearly that the results I present leave no doubt that when one fails to identify him or herself with the (imagined!) people who visit a site or object attraction to such an environment will probably decrease significantly. The important conclusion is that the managers should not only control the people who visit their site – this is relatively easy; the toughest challenge is that first they must know perfectly their actual visitors to know who precisely they are matching their sites to.

The third thing to consider is how to entertain the visiting people. In order to do it properly, managers should also know their visitors, as in the case of social positioning. People have to be entertained in several ways, but always adequately to their status, age, and other segmenting variables. The commercial considerations, intuitively the most obvious and "first", should be undertaken by the managers only after they have the three above-mentioned dimensions under control or at least be working on them simultaneously. Managers should remember, though, that even if ambient leisure and entertainment may constitute differentiation of the shopping center, the evidence on synergetic benefits between leisure, entertainment facilities and the shopping mall itself (non-leisure sales) is problematic (Christiansen, Comer, Feinberg, & Rinne, 1999; Haynes & Talpade, 1996; Kang & Kim, 1999; Reynolds & Howard, 2007). There were even hypotheses issued, based on some empirical evidence, that (1) the entertainment value of the shopping mall is more a distractor than a facilitator to the shopping behavior desired by managers (Christiansen et al., 1999), and (2) leisure facilities owners benefit more from being part of a shopping mall (and its footfall) than shopping mall management does from leisure (Reynolds & Howard, 2007). Nevertheless, providing more entertainment to a mall will definitely attract more visitors and consequently meet social expectations.

Coming back to a discussion of the very results and considering the output variable – attractiveness itself – the appraisal's one-dimensional nature, heavily loaded by it, is not

a real surprise, except that I assumed emotions and cognitive judgments to be separate factors here. Maybe they actually are separate, but the survey method is not best suited to reveal emotions; it rather retrieves the cognitive reflections about one's emotions.

The moderate correlation between the appraisal (emotional-cognitive effect) and frequency of visits is also not amazing. A shopping mall could be both great and located well, therefore highly appreciated and approachable at the same time. On the other hand there can be a not-so-appreciated mall but perfectly located, and be visited more frequently. Finally, there can be two identically appreciated shopping malls, but – for some reason – one may be visited significantly more and the second less often. This was the case in my study, by the way (not reported in this article, as comparison between particular malls was not its aim).

The discrepancy between mall appraisal and frequency of visits can be caused not only by a mall's physical localization. It can be a similar to the effect known in attitudinal psychology - the debate about the convergence of declarations and behavior is still ongoing (Eagly & Chaiken, 2005) - where the well-known phenomenon about appreciating (liking, approving, etc.) does not necessarily mean "using", "approaching" or behaving in any other particular way (Eagly & Chaiken, 2005). There can also be a negative effect: spending money. Visiting a malls usually involves spending money and time; thus it might be the case that some people who visit a particular mall could associate it primarily with such ambivalent investments; then its appreciation may somewhat decrease.

The present study has some limitations. The first one being the nonprobability sampling method with its structure sample, which makes it nonrepresentative even to a population of young Poles. The second is that participants were not asked about a mall in particular, which may have caused various biases related to retrieving a particular shopping mall in detail from one's memory. Third, the visit frequency index (FRQ) was not really a comprehensive index of a mall's "physical attraction". Moreover, and most importantly, it didn't measure the customer retention. If it did, the insight into attractiveness could be much deeper, or the interesting broader construct of shopping mall magnetism (Ooi & Sim, 2007) could be introduced and studied. Fourth, coherently measuring shopping mall convenience failed in this study; and this feature, given the former research on the topic, seems to be a very important driver of shopping mall attractiveness. At least in certain situations.

And the last hypothetical limitation - the enormous importance of atmosphere and entertainment (e.g. over the commercial aspect), and the unexpected positive effect of noise and crowding on shopping mall attractiveness may all result from a young adult sample which may have caused shopping malls to be perceived differently, even if his-

torical studies (Haynes & Talpade, 1996) indicated that a mall's entertainment capability may not necessarily attract young people, but mainly families. And recent studies (Swamynathan et al., 2013) demonstrated that everyone – regardless of age – is tempted by entertaining features at malls. A similar limitation may be applied to the lack of gender differences in appraisal and frequency of visits in shopping malls; in fact they may exist, but appear only, for example, in generational cohorts other than being the sample's core in this study.

It is also worth mentioning that no psychometric variables such as personality, lifestyles or personal values were taken into account as a grouping variable. They can be important drivers of our relationships with shopping malls, as I demonstrated in the literature review herein. Therefore shopping mall attractiveness drivers may vary depending on population segments. In the end, one has to remember that almost all constructs included in this study can be defined a bit differently depending on the researcher and her/his purpose. The specific definition and operationalization of constructs could change the big picture. Such considerations should be taken into account for future research.

To sum the whole study up, it has been demonstrated what the possible drivers of environment's attractiveness are – with focus on the urban shopping mall. This research showed how significantly a particular environmental dimension can modify the way it is perceived, and thus reveal its real nature, as subjectivists would probably say. In a broader sense, we can see that there could be important, intangible environmental features – the atmosphere and perceived image of people visiting it. One can call it the "*genius loci*" – spirit of the place – which can affect environmental attractiveness far more than its affordability when seen by taking utilitarian (e.g. commercial) or even hedonic (e.g. entertainment) dimensions into account. This spirit of place is built on somehow definite phenomena such as environmental legibility or its entertainment capability, but more often on elusive and subjective qualities such as atmosphere (including the design) or the perceived image of people visiting the place. Each quality probably has its own predictors, which could be investigated and modeled until very tangible variables, such as the color of the walls, were reached.

The conclusion is in fact a call for further research. Attractiveness of a place (particularly an urban shopping mall) seems to be an extremely complex idea, demanding an incredibly convoluted model, far larger and more elaborate than any attempt to date; with the model presented in my article included. If we are to understand people-environment relationships better and deeper, further research in this field is required.

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Appendix A. The Evaluated Shopping Malls

Table A1. *Shopping Malls Evaluated in This Study. Facts & Figures.*

Mall Name	IN	GLA	GFA	FLO	STOR	PARK	CINE
Arkady Wrocławskie	2007	30 000	15 000	3	120	1 000	Yes
Galeria Dominikańska	2001	30 000	13 000	4	100	900	No
Magnolia Park	2007	77 595	56 000	2	230	3 018	Yes
Pasaż Grunwaldzki	2007	52 000	25 000	4	200	1 400	Yes
Renoma	2009*	31 000	10 000	5	120	600	No
Sky Tower	2012	25 000	23 000	3	86	1 500	No

Note. IN = Inaugurated (year). GLA = Gross leasable area (total, all floors; tenants excluding offices) in square meters. GFA = Ground floor area in square meters. FLO = Number of floors. STOR = Number of stores and services. PARK = Number of parking spaces. CINE = The presence of a cinema.

*first inaugurated in 1930 as Warenhaus Wertheim.

Table A2. *Shopping Malls Evaluated in This Study. The Factorial Scores.*

Mall Name	APP	ATM	COM	ENT	HRS	LAY	STR	SOC
Arkady Wrocławskie	-.25	.00	-.35	-.06	.04	-.15	.28	-.10
Galeria Dominikańska	.29	-.01	.02	-.29	.05	.42	-.81	.08
Magnolia Park	.37	-.08	.22	-.06	-.15	-.24	-.57	.36
Pasaż Grunwaldzki	.44	.42	-.21	.27	-.04	.05	-.41	-.01
Renoma	-.36	.16	.39	-.34	.12	-.29	.69	-.20
Sky Tower	-.49	-.48	-.08	.49	-.02	.20	.81	-.13

Note. N=384. Standarized scores are reported.

APP = shopping malls' appraisal; ATM = atmosphere; COM = commerce; ENT = entertainment; HRS = human resources & safety; LAY = layout; STR = stressors: noise and crowding; SOC = social positioning.

Appendix B. Intercorrelations of Shopping Mall Indexes

Table B1. *Intercorrelations of Factorial Shopping Mall Indexes.*

	APP	COM	LAY	ATM	HRS	STR	ENT	SOC
APP / Appraisal								
COM / Commerce	.22*							
LAY / Layout	.18*	.01						
ATM / Atmosphere	.52*	-.01	-.04					
HRS / Human Resources & Safety	.16*	.01	.02	.04				
STR / Noise and Crowding	-.16*	.02	-.00	-.02	-.00			
ENT / Entertainment	.26*	.01	-.01	.00	.01	.00		
SOC / Social Positioning	.37*	.01	.00	.00	.05	.00	.02	
FRQ / Frequency of visit	.47*	.03	.16*	.19*	.00	-.06	.05	.14*

Note. N=384. Intercorrelations of indexes (Spearman's rho) are presented below the diagonal.

* $p \leq .001$.

Table B2. *Intercorrelations of Factorial vs Averaged Indexes.*

	APP$^\mu$	COM$^\mu$	LAY$^\mu$	ATM$^\mu$	HRS$^\mu$	STR$^\mu$	ENT$^\mu$	SOC$^\mu$
APP / Appraisal	.99							
COM / Commerce		.88						
LAY / Layout			.87					
ATM / Atmosphere				.87				
HRS / Human Resources & Safety					.83			
STR / Noise and Crowding						.95		
ENT / Entertainment							.93	
SOC / Social Positioning								.88

Note. N=384. Spearman's rho coefficients are presented.

All correlations are significant at $p < .001$, except those marked by [ns]

APP, COM, LAY, ATM, HRR, STR, ENT, SOC = factorial indexes

$^\mu$ indexes built by averaging only the scores from the items which "define" the respective factor.

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