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2020

Leto, ki se je zdelo tako zelo daleč, je zdaj tu. Letnica, ki je v naslovu mnogih strategij in dolgoročnih razvojnih dokumentov, je v času priprave teh dokumentov zvenela zelo strateško, cilji dokumentov pa verjetni in uresničljivi. Prišel je čas, ko že lahko preverimo, ali so bile strategije in politike uspešne ter so njihovi cilji doseženi. Če niso, jih bodo verjetno nove politike s ciljno letnico 2030 ali še boljše 2050 malo preoblikovane in bolj sodobno zveneče prenesle naprej. In kakšna bo potem prihodnost? Samo dve možnosti sta, je napisal George Orwell v svojem preroškem romanu 1984: prihodnost bo ali podobna sedanjosti ali pa bo drugačna od nje.

Tudi po letu 2020 bo obstajal svet s svojimi potenciali in problemi. Gremo naprej, dan za dnem, izziv za izzivom! Srečno!

Damjana Gantar,
glavna urednica

2020

The new year, which only recently seemed so far away, is now already here. The year 2020 features in the titles of many strategies and long-term development documents. It had a very strategic ring to it during the preparation of these documents, whose objectives seemed viable and feasible. The time has come when we can already evaluate whether the strategies and policies have been successful and their objectives have been met. If not, the new policies with 2030 – or, even better, 2050 – as their target year will most likely carry them forward, slightly modified and more modern sounding. What will the future be like then? There are only two scenarios, as George Orwell described in his prophetic novel 1984: the future will either resemble the present or be different from it.

The world with all its potentials and problems will also exist after 2020. So, let us move forward, day by day, challenge by challenge. May it be a good future!

Damjana Gantar,
Editor-in-Chief

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Sibel POLAT
Özge TÜMER YILDIZ

Vključenost lokalne skupnosti v pripravo smernic za urbanistično oblikovanje na območjih kulturne dediščine: primer Burse v Turčiji

V zadnjih letih so centralna vlada in lokalne uprave v Turčiji izvedle različne študije, da bi vzpostavile pravno-upravni okvir urbanističnega oblikovanja in pripravile oblikovalske smernice za ohranjanje identitete zgodovinskih mest pod pritiski hitre urbanizacije. V članku sta avtorici pojasnili, kako sta v praksi izvedli model participativne priprave oblikovalskih smernic za območja kulturne dediščine, ki sta ga oblikovali v okviru znanstvenoraziskovalnega projekta. Predstavili sta uporabo raznih metod, da se lahko v pripravo oblikovalskih smernic za območja kulturne dediščine vključi raznovrstne akterje, razpravljali sta o pomembnosti metod in procesov vključevanja lokalne skupnosti v pripravo teh smernic, na podlagi primerov iz Združenega kraljestva in Turčije pa sta osvetlili področje uporabe smernic za trajnostno ohranjanje območij kulturne dediščine na splošno. Predstavili sta še študijo primera, opravljeno v turškem mestu

Bursa, natančneje v predelu Hanlar, ki je na Unescovem seznamu svetovne dediščine. Študija je obsegala raziskavo načrtovalskih odločitev, analizo območja, anketo med mestnimi prebivalci, poglobljene intervjuje z lokalnimi obrtniki in oblikovalsko delavnico z raznovrstnimi akterji. V predstavitvi glavnih izsledkov študije so med drugim navedeni uporaba raznih načinov vključevanja skupnosti v pripravo oblikovalskih smernic za območja kulturne dediščine v Turčiji, sistem oblikovalskih usmeritev za Burso in seznam priporočil, povezanih z oblikovalskimi smernicami za Hanlar in Burso, sestavljen na podlagi primerov iz Združenega kraljestva.

Ključne besede: oblikovalske smernice, kulturna dediščina, vključenost skupnosti, območja Unescove svetovne dediščine, Hanlar

1 Uvod

Območja kulturne dediščine, ki imajo številne družbenokulturne in družbenogospodarske vrednote, ki lokalnim skupnostim omogočajo, da se povežejo s svojo preteklostjo, so izjemnega pomena za ohranjanje mestne identitete in spomina. Hitra urbanizacija kot posledica rasti prebivalstva, mestne prenove, čedalje večjega prometa ali turističnih pritiskov – težav, s katerimi se trenutno spoprijemajo mnoga mesta – negativno vpliva na pristnost in celovitost območij kulturne dediščine v mestnih središčih (Hassler idr., 2002; ICOMOS, 2005; Van Oers, 2010; Aksoy in Enlil, 2012; Brombach idr., 2013). Poleg tega pomanjkanje celovitega sistema trajnostnega načrtovanja, ohranjanja in oblikovanja, zlasti pomanjkanje osnovnih orodij za vključevanje lokalne skupnosti in urbanistično oblikovanje, ogroža trajnostni razvoj območij kulturne dediščine v državah v razvoju, saj se s tem slabša kakovost javnega življenja in prostora.

Danes se raziskave s področja kulturne dediščine osredotočajo na strategije trajnostnega ohranjanja in razvoja območij, pri katerih imajo pomembno vlogo orodja za vključevanje skupnosti in urbanistično oblikovanje (Özcan, 2009). Za ohranjanje enotnosti, kontinuitete in pristnosti območij kulturne dediščine je treba pripraviti in izvajati zakonske ali neformalne (zakonsko neobvezujoče) oblikovalske smernice (Tiesdell idr., 1996). Smernice za urbanistično oblikovanje večinoma obsegajo dopolnilne planske dokumente, ki zagotavljajo dodatne informacije in nasvete pri zadevah s področja urbanističnega oblikovanja. Pojasnjujejo, kako se lahko posamezna vrsta gradnje izvaja v skladu z oblikovalskimi načeli načrta. Smernice predstavijo niz oblikovalskih načel, ki veljajo za izbrani projekt, opredelijo običajne oblikovalske napake in izvajalcu pomagajo, da se jim izogne, ter lokalnim oblastem olajšajo sporazumevanje in pogajanje z vsemi deležniki, vključenimi v gradnjo (DETR, 2000). Zlasti na območjih kulturne dediščine centralna vlada in lokalne uprave mestno gradnjo izvajajo ob upoštevanju oblikovalskih smernic za ohranjanje lokalnih značilnosti (Madanipour, 1996; DETR in CABE, 2000). Smernice je treba pripraviti ob upoštevanju značilnosti posameznega mesta, mestnega predela ali območja kulturne dediščine (Von Hausen, 2013). Pri tem je zelo pomembna vključenost lokalne skupnosti, saj je ta ključna za okrepitev njene vloge, izboljšanje oblikovalskih predlogov na zgodovinskih območjih, doseganje soglasja med akterji, da se zahteve za izdajo gradbenega dovoljenja lahko obdelujejo tekoče in hitreje, ter za ustvarjanje občutka pripadnosti in krepitev družbenih vezi v njenem okviru (Yeang, 2000).

Številne raziskave poudarjajo pomen vključenosti skupnosti v študije s področja urbanističnega oblikovanja, da bi se

trajnostno ohranjala območja kulturne dediščine v mestih. Carmona (2009) na primer navaja, da je eno izmed deset splošnih oblikovalskih načel tudi samozadostnost, ki zahteva vključenost lokalne skupnosti v urbanistično oblikovanje. Nasser (2003) poudarja, da sta ponovna združitev urbanih oblik z dejavnostmi in rabami, ki potekajo v mestu, ter povezovanje načrtovanja rabe zemljišč s potrebami in željami lokalnih prebivalcev ključna za celostni razvoj skupnosti na območjih kulturne dediščine. Elnokaly in Elseragy (2013) pojasnjujeta, da je treba za trajnostno ohranjanje mestnih območij ohraniti značilno mestno tkivo ter poglobitve lastnosti zgodovinskih območij in življenja skupnosti, ki tam živijo, hkrati pa dejanske strukture in dejavnosti prilagajati sodobnim zahtevam. Tudi Križnik (2018) poudarja potrebo po sodelovanju javnosti, saj to zagotavlja družbeno kohezijo ter omogoča trajnostno urbano regeneracijo in prenovo degradiranih mestnih območij.

Avtorici članka sta razložili, kako sta izvedli model participativne priprave oblikovalskih smernic, ki sta ga oblikovali v okviru znanstvenoraziskovalnega projekta v Hanlarju – enem izmed območij pod Unescovo zaščito v turški Bursi. Postavili sta te hipoteze:

- orodja za urbanistično oblikovanje imajo v državah v razvoju pomembno vlogo pri trajnostnem ohranjanju območij kulturne dediščine;
- vključevanje lokalne skupnosti je v državah v razvoju sestavni del urbanističnega načrtovanja in oblikovanja;
- za ohranjanje predela Hanlar v Bursi so potrebne različne oblikovalske smernice.

V okviru raziskave, predstavljene v članku, sta bila poleg tega izvedena ukrepa, opredeljena v upravljavskem načrtu za Bursi in Cumalıkizik. Prvi se nanaša na pripravo oblikovalskih smernic, ki ustrezajo značilnostim posameznega upravljavskega območja in s tem omogočajo ohranitev lokalnih značilnosti v skladu z načeli urbanističnega oblikovanja. Drugi ukrep pa se nanaša na uravnoteženje kulturnih vrednot in družbenogospodarskega položaja območja z zagotavljanjem aktivnega vključevanja in sodelovanja javnosti, da se izboljša kakovost življenja (Bursa Site Management Unit, 2013).

2 Izkušnje iz Združenega kraljestva: orodja za urbanistično oblikovanje in vključevanje lokalne skupnosti na območjih kulturne dediščine

Upravljavska orodja na področju urbanističnega oblikovanja se delijo na formalna (zakonsko predpisana) in neformalna (zakonsko neobvezujoča). Formalna orodja se delijo še na usmerjanje, spodbujanje in nadzor, z vidika dela komisije iz Združe-

Preglednica 1: Proces in metode vključevanja lokalne skupnosti v pripravo oblikovalskih orodij – primeri iz Združenega kraljestva

Orodje	Status	Metode posvetovanja in vključevanja	Orodja za vključevanje skupnosti in posvetovanje
Dopolnilni planski dokumenti v Liverpoolu	Niso del občinskega prostorskega načrta. Prosilcem pomagajo, da so njihove vloge uspešne.	Obveščanje zakonsko določenih svetovalcev po navadni ali e-pošti, objava dokumentov na spletni strani liverpoolskega mestnega sveta, kjer javnost lahko poda mnenja, izjave za javnost in javna obvestila, razpošiljanje elektronskega gradiva prek krovnih organizacij, namenski sestanki.	Izjava o vključevanju lokalne skupnosti v Liverpoolu: štiritedensko posvetovanje. <ul style="list-style-type: none"> • neformalna javna razprava • objava osnutka dopolnilnega planskega dokumenta (SPD) za morebitne pripombe • sprejetje SPD
Dopolnilni planski dokumenti v Bathu	Dopolnjujejo politiko, predstavljeno v prostorskorazvojnih dokumentih (DPD), sprejeti morajo biti v skladu z zakonsko določenim postopkom in niso podvrženi formalnemu pregledu.	Mediji, obveščanje po navadni ali e-pošti, obveščanje na izbranem območju, lokalni časopisi/reklame, internet, telefonska linija za pomoč, seminarji in predavanja, javni vpogled, formalni in neformalni dialog, sestanki in interaktivne delavnice, ankete, usmerjevalne, svetovalne in delovne skupine, razprave s posamezniki in skupinami, notranje razprave v podjetjih.	Izjava o vključevanju lokalne skupnosti v upravni enoti Bath and North East Somerset: šesttedensko formalno posvetovanje. <ul style="list-style-type: none"> • neformalno vključevanje skupnosti v pripravo osnutka SPD • formalno posvetovanje o SPD • lokalni svet sprejme SPD
Dopolnilne usmeritve in načrtovalske smernice v Edinburgu	Povezane so s strateškimi ali občinskimi prostorskimi načrti. Dopolnilne usmeritve so del prostorskega načrta.	Vprašalnik in analiza v aplikaciji Survey Monkey, pisni odgovori organizacij in posameznikov, blog o oblikovalskih smernicah, brošure za javnost in deležnike, oglasi na avtobusnih postajališčih, delavnice, predstavitve in povratne informacije na omizjih.	Nasveti glede prostorskega urejanja (ang. <i>planning advice note</i>): vključevanje lokalne skupnosti: obravnava v medijih, štiritedensko posvetovanje. <ul style="list-style-type: none"> • uporaba programa VOiCE za vzpostavitev in izvedbo učinkovitega vključevanja Poročilo o posvetovanju glede smernic za oblikovanje ulic v Edinburgu <ul style="list-style-type: none"> • določitev obsega pregleda • ozaveščanje ali preverjanje ozaveščenosti • razpošiljanje osnutka za posvetovanje • ozaveščanje in ocene • preizkus smernic v praksi

Vir: LCC (2013); BNSC (2007); CEC (2018c); The Scottish Government (2010).

nega kraljestva za arhitekturo in grajeno okolje (ang. *Commission for Architecture and the Built Environment* ali CABA) pa neformalna orodja obsegajo vse od zbiranja primerov, širjenja znanja, aktivnega spodbujanja oblikovanja in ocenjevanja oblikovalske kakovosti do neposredne pomoči pri oblikovalskih projektih in/ali procesih (Carmona, 2017). Oblikovalske smernice bi lahko opisali kot usmeritve, kako doseči oblikovalske cilje (Lang, 1996) na podlagi oblikovalskih izhodišč, kot so usklajenost s prostorskim kontekstom, usklajenost z merilom, ravnovesje med javnim in zasebnim prostorom ter prostorska kakovost, dostopnost in pretočnost, usklajenost gostote pozidave z vrsto rabe, mešana raba in tipologija stavb ter trajnostna gradnja in okolje. V skladu s temi izhodišči je treba doseči tudi cilje urbanističnega oblikovanja, kot so ohranitev narave, kontinuiteta in ograjenost, kakovost javnega prostora, dostopnost, berljivost, prilagodljivost in skladnost, raznovrstnost in ekološko ravnovesje (DETR in CABA, 2000; Yeang, 2000; Punter, 2007; Von Hausen, 2013).

Oblikovalskih smernic, ki temeljijo na ciljih urbanističnega oblikovanja, je več vrst. Carmona (2011) opredeljuje štiri vrste formalnih oblikovalskih smernic z različno stopnjo lokacijske specifičnosti in interpretacije: standardi (splošni, predpisovalni), predpisi (veljajo za zadevno območje, predpisovalni), usmeritve (splošne, ciljne) in okviri (veljajo za zadevno območje, ciljni). Poleg teh se v Združenem kraljestvu pogosto uporabljajo tudi neformalne smernice, ki se nanašajo na splošne vidike oblikovalske ali urbanistične prakse in so namenjene izmenjavi primerov dobre prakse z vidika oblikovalskega procesa ali izsledkov (Cowan, 2002; CABA, 2003; Ministry of Environment and Urbanization in Mimar Sinan Fine Arts University, 2016; Carmona, 2017).

V načrtovalski praksi v Združenem kraljestvu se uporabljajo različne kategorije smernic in orodij. Oblikovalske smernice vsebujejo nasvete o ključnih oblikovalskih točkah, ki jih je treba upoštevati pri določanju načrtovalskih procesov in orodij.

Poleg tega politične izjave in zakoni v Združenem kraljestvu spodbujajo vključevanje lokalne skupnosti v zadeve s področja urbanističnega oblikovanja, upravljanja območij kulturne dediščine in urejanja prostora. Lokalne oblasti v Združenem kraljestvu izdajajo posebne izjave, s katerimi se lokalne skupnosti vključijo v oblikovanje prostorske politike in obravnavo zahtev za izdajo gradbenega dovoljenja (Royal Town Planning Institute in Consultation Institute, 2005).

V Liverpoolu in Bathu je vključenost lokalne skupnosti zagotovljena na podlagi izjav o vključevanju lokalne skupnosti, v katerih so pojasnjeni postopek, metode in druge podrobnosti vključevanja skupnosti v pripravo lokalnega prostorskorazvojnega okvira, vključno s prostorskorazvojnimi dokumenti (ang. *development plan documents*, v nadaljevanju: DPD) in dopolnilnimi planskimi dokumenti (ang. *supplementary planning documents*, v nadaljevanju: SPD), ter v obravnavo zahtev za izdajo gradbenega dovoljenja (BNESC, 2007; LCC, 2013). SPD vsebujejo dodatne podatke o tem, kako naj bi se izvajale politike, določene v prostorskorazvojnih dokumentih. Mednje spadajo oblikovalske smernice, gradbeni napotki in tematske razprave. Vključenost skupnosti v pripravo SPD poteka predvsem v naslednjih treh fazah: neformalna javna razprava, formalno posvetovanje o osnutku SPD ter priprava in sprejetje končnega SPD. Za posvetovanje in vključevanje skupnosti se uporabljajo različne metode (preglednica 1; BNESC, 2007; LCC, 2013). V Liverpoolu so SPD – ki morajo biti v skladu z državno, regionalno in lokalno prostorsko politiko – uradno del prostorskorazvojnega okvira izbranega območja. Eden izmed takšnih dokumentov je tudi SPD o liverpoolskem obrežju, ki je na Unescovem seznamu svetovne dediščine (ang. *Liverpool Maritime Mercantile City World Heritage Site SPD*). Njegov cilj je zvišati standarde urbanističnega oblikovanja in ohranjanja kulturne dediščine ter predstaviti smernice za zaščito in povečanje izjemne univerzalne vrednosti območja svetovne kulturne dediščine, hkrati pa spodbuditi naložbe in gradnjo, ki zagotavljajo zdrav gospodarski razvoj za vse deležnike in podpirajo trajnostno regeneracijo (LCC, 2009). Tudi v Bathu veljajo različni SPD, ki jih je lokalni svet sprejel s posebnim sklepom in imajo pomembno vlogo pri sprejemanju načrtovalskih odločitev (BNESC, 2018). SPD, ki ocenjuje splošno podobo mesta Bath (ang. *Bath City-Wide Character Appraisal SPD*), na primer opredeljuje ključne prvine mestne podobe, pri čemer izpostavlja razlike po mestu (BNESC, 2005). SPD o Bathu kot območju, ki spada v Unescovo svetovno dediščino (ang. *City of Bath WHS Setting SPD*), zagotavlja podatke in orodja za učinkovito zaščito in ustrezno upravljanje zavarovanega območja (BNESC, 2013). Priročnik o urejanju ulične krajine (ang. *Streetscape Manual SPD*) je namenjen usmerjanju izbora, oblikovanja, urejanja in vzdrževanja ulične krajine in njenega ohranjanja (BNESC, 2005). Poleg naštetih dokumentov se uporablja tudi publikacija *Pattern Book* (v dveh

delih), ki določa kakovost ulic in javnih prostorov v središču mesta (BNESC, 2015).

Na Škotskem se poleg zakonodaje uporabljajo tudi posebni navsveti glede prostorskega urejanja in usmeritve, ki se nanašajo na vključevanje skupnosti in so na voljo iz številnih virov (Royal Town Planning Institute in Consultation Institute, 2005). Če je treba v okviru prostorskega načrta oblikovati dopolnilne usmeritve, je treba po zakonu obvezno izvesti javno posvetovanje (The Scottish Government, 2010). V Edinburgu se uporabljata dve vrsti usmeritev. Dopolnilne usmeritve zagotavljajo dodatne informacije o politikah, sprejetih v edinburškem občinskem prostorskem načrtu, načrtovalske smernice pa dajejo nasvete o najrazličnejših temah, povezanih z novogradnjo (CEC, 2018a). Edinburški standardi urbanističnega oblikovanja (ang. *Edinburgh Standards for Urban Design SG*) na primer vsebujejo oblikovalska načela, ki se delijo na mestno, lokalno, območno/ulično in javno raven (CEC, 2003). V edinburških oblikovalskih usmeritvah (ang. *Edinburgh Design Guidance PG*) so predstavljena pričakovanja mestnega sveta v zvezi z oblikovanjem novogradenj v Edinburgu, ki morajo dosegati najvišjo oblikovalsko kakovost in se dobro ujemati s preostalim mestnim okoljem (CEC, 2018b). Edinburške usmeritve za oblikovanje ulic (ang. *Edinburgh Street Design Guidance SG*), katerih cilj je uskladiti obliko ulic in spodbuditi sodelovanje med strokami, so zakonsko neobvezujoč usmeritveni dokument, osredotočen na uporabnika (CEC, 2015). Usmeritve o spomeniško zaščitenih stavbah in zavarovanih območjih (ang. *Guidance on Listed Buildings and Conservation Areas PG*) pa vsebujejo informacije o popravilu, spreminjanju ali razširitvi spomeniško zaščitenih in nezaščitenih stavb na zavarovanih območjih (CEC, 2019).

Anglija in Škotska sta torej dobra primera dežel, ki so oblikovale, opredelile in uporabile orodja za urbanistično oblikovanje in vključevanje skupnosti kot ključne prvine načrtovalske in oblikovalske zakonodaje ter strokovne prakse. V obeh so bile od državne do lokalne ravni za območja kulturne dediščine vzpostavljene različne vrste oblikovalskih orodij, ki podpirajo druga drugo. Orodja, sprejeta v okviru prostorskih načrtov, imajo formalni status dopolnilnega planskega dokumenta ali usmeritve, za katero se zahteva javno posvetovanje. Poleg teh so še usmeritve, ki pojasnjujejo, kako vključiti lokalno skupnost ter katera orodja je treba uporabiti pri načrtovanju, oblikovanju in ohranjanju območij (preglednica 1). V Združenem kraljestvu je tudi mnogo javnih organov, dobrodelnih organizacij in pobud, ki podpirajo in usmerjajo vključevanje lokalne skupnosti v državi.

Izkušnje iz Združenega kraljestva torej kažejo, da imajo orodja za urbanistično oblikovanje pomembno vlogo pri trajnostnem ohranjanju območij kulturne dediščine in da je vključenost

lokalne skupnosti nepogrešljiv del načrtovalskega in oblikovalskega procesa v razvitih državah. S tem sta potrjeni prva in druga hipoteza raziskave. Pregled orodij za urbanistično oblikovanje in vključevanje lokalne skupnosti v Združenem kraljestvu daje uporabne podatke za vključevanje lokalne skupnosti v pripravo oblikovalskih smernic in oblikovanje sistema oblikovalskih usmeritev v Bursi.

3 Smernice za vključevanje lokalne skupnosti in urbanistično oblikovanje v turškem načrtovalskem sistemu

Načrtovalski sistem v Turčiji je urejen z gradbenim zakonom št. 3194 iz leta 1985. Zakon in predpisi, ki iz njega izhajajo, pa nikjer ne opredeljujejo vključenosti lokalne skupnosti in urbanističnega oblikovanja v načrtovalskem sistemu. V okviru devetega razvojnega načrta sta bila leta 2010 oblikovana celostna urbanistična strategija in akcijski načrt (KENTGES), katerih cilj je bil izboljšati življenjski standard ter okrepiti gospodarsko, socialno in kulturno zgradbo mest. V teh dokumentih je bila prvič opredeljena potreba po smernicah za urbanistično oblikovanje in vključenost skupnosti v turškem načrtovalskem sistemu. Po ustanovitvi oddelka za urbanistično oblikovanje pri generalnem direktoratu za prostorsko načrtovanje ministrstva za okolje in urbanizacijo leta 2013 se je povečalo število raziskav za razvoj prakse vključevanja skupnosti in pripravo oblikovalskih smernic (MPWS, 2010).

Leta 2014 je bil gradbeni zakon št. 3194 spremenjen, načela urbanističnega oblikovanja pa so bila opredeljena v uredbi o pripravi prostorskih načrtov. Poleg tega so novi predpisi določali, da je treba pripraviti oblikovalske smernice za oblikovanje mestne podobe in identitete, za povečanje estetske in umetniške vrednosti prostorov ter za usklajeno razvrščanje stavb na podlagi oblikovalskih projektov. Kljub temu je raziskava, ki sta jo opravili Rezafarjeva in Turkova (2018), pokazala, da številni dejavniki, povezani z urbanističnim oblikovanjem in estetsko presojo, niso vključeni v gradbeni zakon in preostalo turško prostorsko zakonodajo. Zato sta avtorici opredelili parametre, ki bi jih lahko vključili v zakonodajo na državni, mestni in lokalni ravni, vključno z oblikovalskimi smernicami.

Omenjena uredba neposredno ne omenja vključenosti skupnosti v načrtovalski proces, vendar poudarja, da morajo biti sprejeti okoljski in občinski prostorski načrti javno objavljeni za morebitne pripombe, ki se lahko predložijo v 30 dneh, vse vrste načrtov in njihove priloge morajo biti dostopni javnosti, medijem in elektronskim komunikacijam, javnost pa se lahko o načrtih obvešča na seminarjih, konferencah, razstavah in drugih srečanjih. Navodila za pripravo in oceno oblikovalskih








projektov, ki jih mora odobriti ministrstvo za okolje in urbanizacijo (Ministry of Environment and Urbanisation, 2015), poleg tega določajo, da je eden izmed ciljev projektov urbanističnega oblikovanja olajšati javna pogajanja na podlagi obveščanja prebivalcev, strokovnih zbornic in nevladnih organizacij o oblikovalskih projektih na sestankih z lokalnimi vodji, tiskovnih konferencah ipd. ter pripraviti poročila o njihovih mnenjih in priporočilih. V navodilih pa ni opredeljena nobena metoda vključevanja skupnosti, ki bi pospešila javna pogajanja. Trenutno na ministrstvu v sodelovanju s strokovnimi zbornicami, univerzami in nevladnimi organizacijami potekajo študije, povezane z oblikovanjem prakse vključevanja skupnosti in pripravo oblikovalskih smernic, v bližnji prihodnosti pa bo ministrstvo od občin zahtevalo, da oblikovalske smernice tudi dejansko pripravijo.

Raziskave izvajajo različne javne ustanove, avtorici pa sta ugotovili, da vlada vrzel pri raziskavah s področja trajnostnega ohranjanja mestnih območij kulturne dediščine z vidika uporabe orodij za urbanistično oblikovanje. Zato sta leta 2012 na univerzi Uludag v Bursi začeli izvajati raziskovalni projekt o modelu smernic za urbanistično oblikovanje v mestnem središču Burse, katerega cilj je razviti model participativne priprave oblikovalskih smernic za območja kulturne dediščine. V okviru projekta sta med letoma 2012 in 2015 izvedli tudi študijo primera v predelu Hanlar v Bursi.

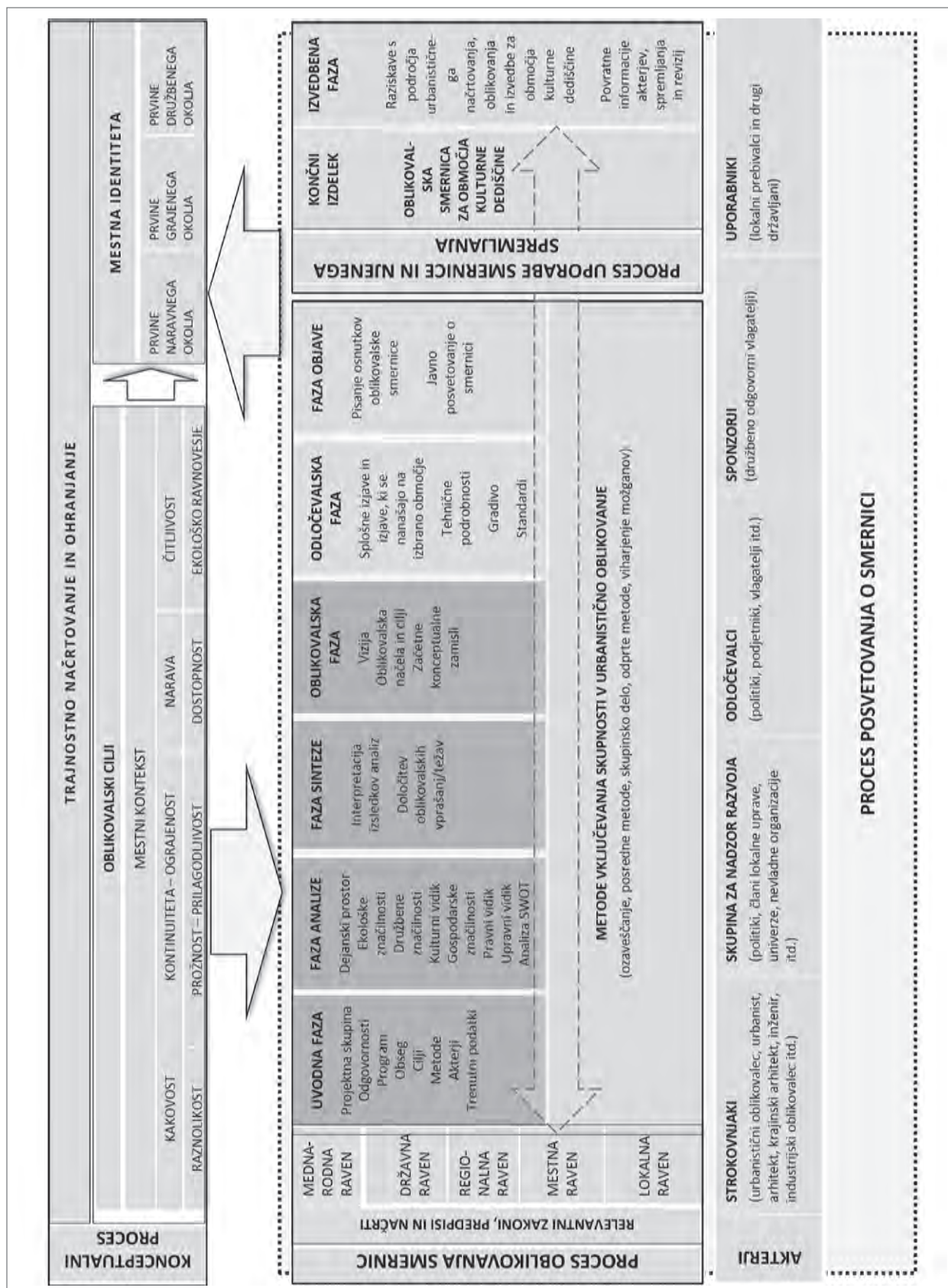
4 Gradivo in metode

Bursa (slika 1) je četrto največje turško mesto, je na jugu pokrajine Marmara, v njem pa je leta 2017 živelo 2,936.803 ljudi. On nekdaj je veljalo za pomembno civilizacijsko središče, njegovi začetki pa segajo v leto 6500 pr. n. št. Mesto Prusa (danes Bursa) so leta 185 pr. n. št. ustanovili Bitinijci. Mesto je bilo nato pod rimsko in bizantinsko oblastjo, nato pa ga je leta 1326 osvojil sultan Orhan in ga spremenil v prestolnico Otomanskega cesarstva (Bursa Site Management Unit, 2013).

Bursa in bližnja vas Cumalıkızık sta bili leta 2014 na podlagi štirih meril nominirani za vpis na Unescov seznam svetovne kulturne dediščine (Bursa Site Management Unit, 2013). Šlo je za serijsko nominacijo osmih območij (na šestih vplivnih območjih; slika 1), ki ponazarjajo nastanek mestnega in podeželskega sistema Otomanskega cesarstva (Bursa Site Management Unit, 2013). Hanlar (slika 1) je eno izmed območij kulturne dediščine v središču Burse. Nastalo je v 14. stoletju kot trgovsko središče ob karavanskih poteh ob vznožju gore Uludag, v njem pa je mnogo primerkov monumentalne in civilne arhitekture (npr. gostišča, mošeje, javna kopališča in bazarji), ki so vse do danes ohranili svojo celovitost in avtentičnost (npr. kompleks Orhana Ghazija). Predel ponazarja mestno identiteto Burse z njenimi izvornimi urbanističnimi in arhitekturnimi značilnostmi ter tradicionalno trgovsko dejavnostjo.

Mednarodna raven	Turčija in širša okolica		NAČRTOVALSKA RAVEN	
Državna raven	Turčija			
Pokrajina	Marmara			
Provinca	Bursa			
Okrožje	Osmangazi			
Mestna raven	Mestno središče			NAČRTOVALSKA + OBLIKOVALSKA RAVEN
Lokalna raven	Hanlar			
			OBLIKOVALSKA + ARHITEKTURNA RAVEN	

Slika 1: Lokacija proučevanega območja na različnih načrtovalskih ravneh (vir: Bursa Site Management Unit, 2013; ilustracija: avtorici)



Slika 2: Model participativne priprave oblikovalskih smernic za območja kulturne dediščine (vir: Polat idr., 2018)

4.1 Raziskovalna metodologija

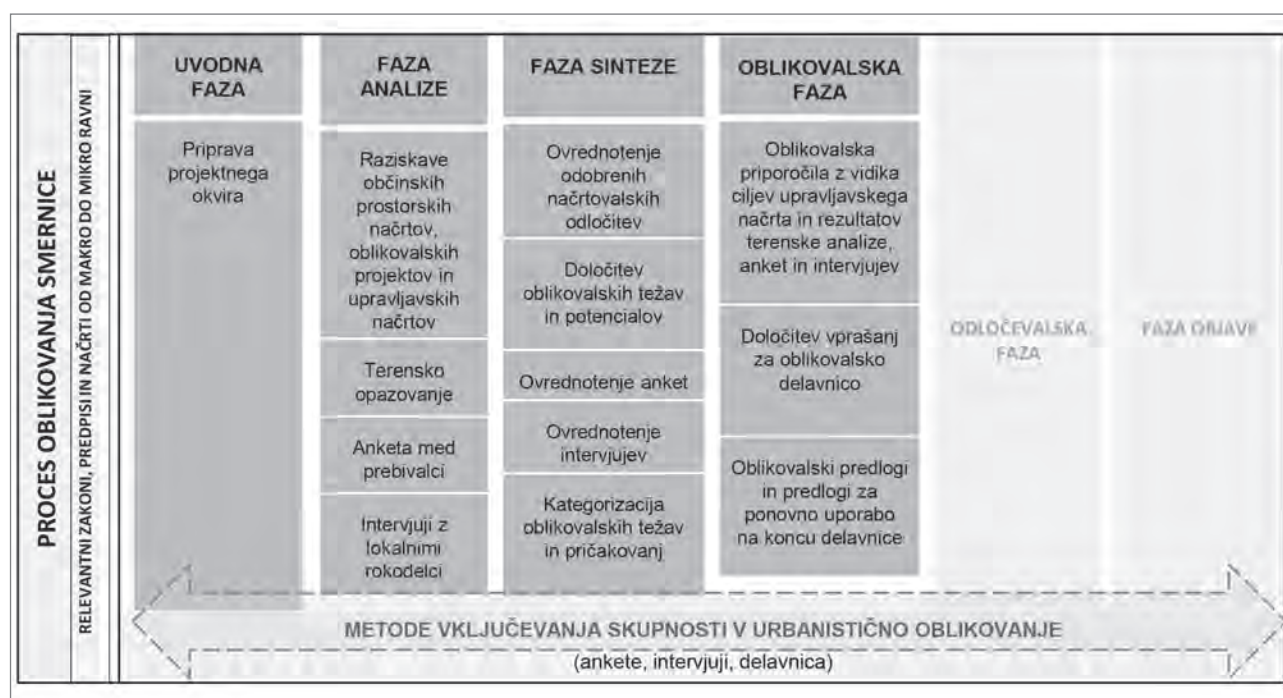
Ta raziskava je del raziskovalnega projekta, katerega namen je bil razviti model participativne priprave oblikovalskih smernic za središče Burse. V članku se avtorici nista osredotočili na to, kako je projektna ekipa razvila model, ampak sta predstavili načine vključevanja lokalne skupnosti v pripravo oblikovalskih smernic za Hanlar na podlagi prakse v Združenem kraljestvu. V članku je predstavljen tudi model (slika 2) z vsemi fazami raziskave.

Metodologija raziskave je razdeljena v tri faze. V fazi analize sta avtorici proučili prostorske in upravljavske načrte in oblikovalske smernice, ki trenutno veljajo za Hanlar, ter opravili terensko analizo območja, anketo med prebivalci (uporabniki) in poglobljene intervjuje z lokalnimi obrtniki ob upoštevanju oblikovalskih vprašanj in ciljev upravljavskega načrta za Burso in Cumalıkızık. V fazi sinteze sta ovrednotili izsledke analiz in razvrstili zaznane težave s področja urbanističnega oblikovanja in pričakovanja uporabnikov in lokalnih obrtnikov v posamezne kategorije. V oblikovalski fazi sta oblikovali priporočila za urbanistično oblikovanje, na podlagi katerih bi se rešile težave in izpolnila pričakovanja prebivalcev, organizirana pa je bila tudi participativna oblikovalska delavnica, na kateri so študenti arhitekture razvili oblikovalske projekte za neizkoriščene javne prostore v Hanlarju. Na tej podlagi je lahko projektna skupina nato razvila model participativne priprave oblikovalskih smernic za območja kulturne dediščine (slika 3).

Model vključuje štiri osnovne procese (konceptualizacijo, oblikovanje smernic, spremljanje njihove uporabe in posvetovanje o njih) za oblikovanje in izvedbo smernice za urbanistično oblikovanje. Konceptualizacija temelji na vprašanih urbanističnega oblikovanja in prvinah mestne identitete z vidika trajnostnega ohranjanja mestnih območij. Oblikovanje smernic temelji na urbanističnem oblikovanju in se deli v šest med seboj povezanih korakov ali faz (tj. na uvodno, analitično, sintetično, oblikovalsko in odločevalsko fazo ter fazo objave). Spremljanje uporabe smernic pomeni, da se bodo med uporabo izdelane smernice proučevale prejete povratne informacije in se bodo izvajale revizije. Posvetovanje o smernici pa temelji na določanju akterjev in metod vključevanja skupnosti v urbanistično oblikovanje ter se izvaja skupaj s preostalimi tremi procesi (s konceptualizacijo, oblikovanjem in spremljanjem uporabe smernic). Vsi navedeni procesi so med seboj povezani, prožni in se lahko prilagodijo glede na prejete povratne informacije (Polat idr., 2018).

4.2 Ovrednotenje sprejetih načrtovalskih odločitev

Območje Reyhan-Kayhan-Hanlar je bilo zaradi svojega zgodovinskega pomena leta 1986 razglašeno za območje mestne kulturne dediščine. Zanj, vključno s predelom Hanlar, so bili sprejeti strateški, glavni in občinski prostorski načrt. Glavni cilj okoljskega načrta iz leta 1998 za Burso, z veljavnostjo do leta 2020 in izdelanega v merilu 1 : 100.000, je bil ohranitev,



Slika 3: Izvedba modela participativne priprave oblikovalskih smernic v Hanlarju (ilustracija: avtorici)

obnova in sanacija starega mestnega jedra na osrednjem ureditvenem območju ter spodbujanje rasti storitvenega sektorja na tem območju do leta 2020. Gostota pozidave se ni smela povečati. V načrtu ohranitve osrednjega območja Burse in območja Reyhan-Kayhan-Hanlar (merilo: 1 : 1.000; 1988 – 2005) je bilo določenih sedem posebnih projektnih območij v Hanlarju, na katerih lahko kakršna koli oblika gradnje (npr. obnove, popravila in rekonstrukcije) poteka samo v okviru projektov obnove, spremembe namembnosti objektov in urbanističnega oblikovanja, ki jih predhodno odobri odbor za ohranjanje kulturne in naravne dediščine v Bursi. Kljub temu do zdaj še niso bili razviti oblikovalski projekti ali orodja za območje Hanlarja. Čeprav je bil leta 2012 organiziran oblikovalski natečaj za trg Orhangazi in njegovo okolico v Hanlarju, projekt, ki je na tem natečaju zmagal, še ni bil izveden.

Ob ustanovitvi enote za upravljanje območij kulturne dediščine v Bursi je bila vložena nominacija za vpis Burse na Unescov seznam svetovne kulturne dediščine. Leta 2013 je bil tako na participativni podlagi pripravljen upravljavski načrt za Burso in Cumalıkızık, ki določa cilje in ukrepe, povezane s težavami, s katerimi se spoprijemajo območja kulturne dediščine. Glavne težave v Hanlarju so pomanjkanje celostnega pristopa k upravljanju območja, pomanjkanje skupne podatkovne zbirke za izmenjavo podatkov med ustanovami, stari in neustrezni lokalni konservatorski načrti, dejansko in funkcionalno propadanje objektov, majhna raznolikost uporabnikov, arhitekturno neskladje med novo zgrajenimi objekti in zgodovinsko grajeno strukturo ter preveč nezakonitih prizidkov k zgodovinskim stavbam, ki zasenčijo njihovo izvirno arhitekturno podobo. Te težave lahko razdelimo v naslednjih pet kategorij oblikovalskih vprašanj: upravljanje in vključevanje (v procesu urbanističnega oblikovanja), dostopnost in pretočnost, usklajenost z merilom, trajnostna gradnja in okolje ter usklajenost mešane rabe. Predlagane oblikovalske smernice bi torej morale reševati našeta oblikovalska vprašanja in s tem zagotoviti trajnostni razvoj Hanlarja.

4.3 Izsledki terenske analize

Med terensko analizo je projektna skupina na ravni mesta in stavb odkrila podobne težave in potenciale, kot so opredeljeni v upravljavskem načrtu. V glavnem se nanašajo na pomanjkanje prostorske kakovosti in mešane rabe, težave z varnostjo ponoči, slab dostop za pešce in propadanje zgodovinske grajene strukture. Lahko jih razdelimo v naslednjih pet skupin oblikovalskih vprašanj: usklajenost s prostorskim kontekstom, usklajenost z merilom, ravnovesje med javnim in zasebnim prostorom, prostorska kakovost, dostopnost in pretočnost ter ravnovesje med mešano rabo in tipologijo stavb. Območje ima tudi mnogo potencialov: zaradi svojega zgodovinskega in kulturnega pomena je na Unescovem seznamu svetovne dediščine, je lahko dostopno

območje v mestnem središču, poleg tega ima več praznih parcel, ki bi se lahko pozidale. Da bi se zagotovila vključenost lokalne skupnosti, so bili v druge faze raziskave vključeni tudi lokalni prebivalci in obrtniki.

4.4 Izsledki ankete

V okviru raziskave je bila opravljena tudi anketa med mestnimi prebivalci. Njen glavni cilj je bil analizirati Hanlar z vidika osnovnih oblikovalskih vprašanj (tj. usklajenost s prostorskim kontekstom, usklajenost z merilom, ravnovesje med javnim in zasebnim prostorom, prostorska kakovost, dostopnost in pretočnost, usklajenost gostote pozidave z vrsto rabe, mešana raba in tipologija ter trajnostna gradnja in okolje). S tem sta avtorici lahko določili glavna vprašanja, ki bi jih bilo treba upoštevati v predlagani oblikovalski smernici. Ciljna populacija ankete so bili obiskovalci nakupovalnih središč. Danes številni mestni prebivalci raje preživljajo čas v nakupovalnih centrih kot v mestnih središčih, zato so mnoga mestna središča zapuščena in propadajo. Anketa je bila zato oblikovana tako, da je ugotavljala mnenje, zadovoljstvo in pričakovanje obiskovalcev nakupovalnih središč v Hanlarju v povezavi s tem, kaj bi jih pritegnilo v mestno središče.

Anketa je bila opravljena v štirih največjih nakupovalnih središčih v Bursi, eno izmed katerih je prav tako kot predel Hanlar v središču mesta in je zato njegov največji tekmelec v smislu pritegovanja obiskovalcev. Anketa je bila izvedena med 370 obiskovalci nakupovalnih središč. Obiskovalci, ki so v Bursi živeli manj kot leto, turisti in zaposleni v nakupovalnih središčih so bili iz nje izključeni. Anketni vprašalnik je vseboval 34 vprašanj, anketiranci pa so ga izpolnjevali od 10 do 12 minut. Prvi del vprašalnika se je nanašal na osebne značilnosti anketirancev, največja težava pa je bila premajhna raznolikost uporabnikov. Drugi del vprašalnika je temeljil na vprašanjih o najznačilnejših prvinah in podobi Hanlarja. Izsledki so pokazali, da je glavna težava pomanjkanje občutka pripadnosti skupnosti. Promet, hrup, kaos in gneča na tem območju negativno vplivajo na podobo kraja in družbeno interakcijo. Tretji del vprašalnika je vključeval vprašanja o navadah in težavah v Hanlarju ter njegovem upravljanju. Osnovne težave so gost promet, slab dostop do območja, malo obiskovalcev, pomanjkanje parkirišč, neizkoriščeni javni prostori v nekaterih restavracijah, slabo upravljanje in oglaševanje območja ter slaba obveščena ljudi o nominaciji območja kulturne dediščine. Zadnji, četrti del vprašalnika je vseboval vprašanja o pričakovanjih uporabnikov glede Hanlarja. Izsledki so pokazali, da vlada največja potreba po novih območjih za kulturne dejavnosti, spremembi namembnosti zgodovinskih stavb in novih oblikovalskih predlogih za neizkoriščene javne prostore na tem območju. Težave in pričakovanja, o katerih so poročali obiskovalci nakupovalnih središč, se osredotočajo na naslednjih pet

oblikovalskih vprašanj: dostopnost in pretočnost, usklajenost z merilom, usklajenost mešane rabe, ravnovesje med javnim in zasebnim prostorom ter prostorska kakovost in usklajenost s prostorskim kontekstom.

4.5 Izsledki poglobljenih intervjujev

Da bi ocenili družbenogospodarske razmere lokalnih prebivalcev, sta se avtorici odločili, da bosta opravili intervjuje s skupino lokalnih obrtnikov v Hanlarju. Avtorici sta opravili 22 poglobljenih intervjujev, in to v sodelovanju z združenjem zgodovinskega bazarja in območja Hanlar v Bursi (ang. Association of Bursa Historical Bazaar and Hanlar District, v nadaljevanju: BTCHBD), nevladno organizacijo, katere cilj je ohraniti zgodovinsko grajeno strukturo območja, zadovoljiti trenutne potrebe in zahteve družabnega življenja na območju in doseči, da postane privlačno za obiskovalce (BTCHBD, 2010). Uporabili sta polstrukturirano obliko intervjujev, ki so trajali približno 15 do 20 minut. Obrtniki z različnih področij so svoj poklic ocenili z vidika dohodka in vrste strank ter razkrili svoja pričakovanja v zvezi s fizičnoprostorskimi, gospodarskimi, družbenimi, kulturnimi in funkcionalnimi dejavniki proučevanega območja. Po mnenju intervjuvancev so glavne težave na tem območju naslednje:

- nezadostno sodelovanje med ustanovami in lokalnimi obrtniki (pomanjkanje ustreznih dovoljenj, slaba vključenost obrtnikov v odločanje, pomanjkanje priložnosti za promocijo območja, slabe izobraževalne možnosti za lokalne obrtnike itd.);
- ovirano izvajanje projektov obnove in spremembe namembnosti objektov zaradi visoke stopnje zasebnega lastništva;
- majhna raznolikost in malo strank (zaradi pomanjkanja območij z mešano rabo in težav z varnostjo, šibke kupne moči, majhne privlačnosti bazarja zaradi novih nakupovalnih središč v mestnih predelih, ki se širijo proti zahodu, ter prevlade domačih turistov in turistov z Bližnjega vzhoda);
- slaba prometna infrastruktura in slab dostop (neustrezna mesta za prestopanje, pomanjkanje urejenih površin za pešce in parkirišč).

Izsledki so pokazali, da se težave in pričakovanja lokalnih obrtnikov osredotočajo na naslednjih pet oblikovalskih vprašanj: upravljanje in vključenost (v procesu urbanističnega oblikovanja), usklajenost mešane rabe, usklajenost z merilom, dostopnost in pretočnost ter trajnostna gradnja in okolje.

4.6 Izsledki oblikovalske delavnice za središče Burse

V skladu s cilji upravljaljskega načrta in oblikovalskimi pripočili, oblikovanimi na podlagi anket in intervjujev, sta avtorici organizirali participativno oblikovalsko delavnico, katere namen je bil poiskati priložnosti za projekte urejanja javnega prostora v številnih predelih Hanlarja, podobne konceptualnim rešitvam v smernicah za Bath in Liverpool.

Delavnica se je osredotočala na projekte konceptualnega oblikovanja za neizkoriščene javne prostore v Hanlarju, pri čemer je bila vzpostavljena participativna platforma, ki je združevala številne akterje: predstavnike javnih ustanov, lokalnih oblasti, strokovnih zbornic, nevladnih organizacij in lokalnih prebivalcev, študente arhitekture in projektno skupino, ki je bila hkrati koordinator delavnice. Večina predlogov, ki so jih predstavili študenti, se je nanašala na spremembo namembnosti gostišč (tj. gostišča in javni prostori bi lahko postali prizorišča družabnih in kulturnih dogodkov, kar bi pripomoglo k ohranjanju tradicionalne kulture in značilnosti območja), drugi pa so se nanašali na ureditev novih zelenih površin in kakovostnih javnih prostorov v mestnem središču ter na vključevanje sodobnih arhitekturnih rešitev v zgodovinsko grajeno strukturo območja. Študenti so se pri oblikovanju predlogov osredotočali na reševanje naslednjih pet oblikovalskih vprašanj: usklajenost tipologije stavb z mešano rabo, usklajenost s prostorskim kontekstom, ravnovesje med javnim in zasebnim prostorom, prostorska kakovost, dostopnost in pretočnost ter trajnostna gradnja in okolje. Delavnica je lokalnim voditeljem in drugim deležnikom omogočila, da so oblikovali novo vizijo za območja kulturne dediščine in hkrati izboljšali ozaveščenost mestnih prebivalcev o trajnostnem razvoju teh območij in uporabi orodij za vključevanje lokalne skupnosti.

5 Razprava in priporočila

Z vidika povezave med trajnostnim načrtovanjem, ohranjanjem območij, urbanističnim oblikovanjem in arhitekturo je raziskava pokazala, da so za območje Hanlarja v Bursi potrebne raznovrstne oblikovalske smernice. Zato je bil na podlagi primerov iz Združenega kraljestva za Burso predlagan sistem usmeritev za urbanistično oblikovanje, ki je potrdil tretjo hipotezo raziskave (slika 4). Metropolitanska občina Bursa bi morala oblikovalske smernice za Burso pripraviti v obliki formalnih dopolnilnih planskih dokumentov na podlagi participativnega pristopa. Sistem usmeritev je sestavljen iz treh ravni, opredeljenih v nadaljevanju.

NAČRTOVANJE		NAČRTOVANJE, URBANISTIČNO OBLIKOVANJE			URBANIST. OBLIKOVANJE, ARHITEKTURA	
Področje	Država	Regija	Provinca, mesto	Mestno središče	Lokalni javni prostor	Javni prostor, stavbe
Veljavni urbanistični načrti	Deseti razvojni načrt (2014–2018)	Regionalni načrt za Burso, Eskişehir in Bilecik (2014–2023) Strateški prostorski načrt za Burso, Eskişehir in Bilecik (1 : 500.000–1 : 250.000)	Glavni načrt za osrednje in zahodno ureditveno območje (1 : 25.000) + poročilo (2006) Glavni načrt za občino Osmangazi (1 : 5.000) + poročilo (2008)	Načrt za ohranitev osrednjega območja Burse in območja Reyhan-Kayhan-Hanlar (1 : 1.000) + poročilo + pojasnila (1988–2005)	Oblikovalski projekti (merilo: 1 : 500) za posebna projektna območja (1988–2005)	Projekti omejenega urejanja mestnega prostora s spremembo namembnosti in obnovo objektov (1988–2005)
Upravljaljski načrt za Burso in Cumalikizik (2013–2018)						
DRŽAVNE OBLIKOVALSKE USMERITVE						
Celostna urbanistična strategija in akcijski načrt (2010–2023, na voljo)						
OBLIKOVALSKE USMERITVE ZA CELOTNO MESTO						
Ocena splošnih značilnosti mesta						
Oblikovalski standardi za Burso						
LOKALNE/TEMATSKE OBLIKOVALSKE USMERITVE						
Okvir za urbanistično oblikovanje in urejanje javnih prostorov v središču Burse						
Lokalni razvojni okvir za območja kulturne dediščine v Bursi in Cumalikiziku						
STAVBNE/TEHNIČNE OBLIKOVALSKE USMERITVE						
Smernice za ohranjanje lokalnih značilnosti območja svetovne kulturne dediščine v Hanlarju (ulična krajina, spomeniško zaščitene stavbe itd.)						
Predlagane oblikovalske smernice						

Slika 4: Predlagani sistem oblikovalskih usmeritev za Hanlar v okviru turškega načrtovalskega sistema (ilustracija: avtorici)

Preglednica 2: Napake pri reševanju oblikovalskih vprašanj v Hanlarju na podlagi izsledkov študije primera

Napaka pri reševanju oblikovalskih vprašanj	Analiza					
	Odločitve v načrtu upravljanja območja	Terenska analiza	Ankete	Poglobljeni intervjuji	Delavnica	Skupaj
Usklajenost s prostorskim kontekstom	2	5	3	1	4	15
Usklajenost z merilom	4	5	5	4	3	21
Ravnovesje med javnim in zasebnim prostorom in prostorska kakovost	2	4	4	2	4	16
Dostopnost in pretočnost	5	4	5	4	4	22
Usklajenost gostote pozidave z vrsto rabe	3	3	2	2	2	12
Usklajenost tipologije stavb z mešano rabo	3	3	4	5	5	20
Trajnostna gradnja in okolje	4	2	1	3	3	13
Upravljanje in vključevanje (v procesu oblikovanja)	5	1	2	5	1	14

Opomba: 1 (redko omenjeno) – 5 (pogosto omenjeno).

Oblikovalske usmeritve za celotno mesto:

- ocena splošnih značilnosti mesta bi morala dati vpogled v to, v čem se Bursa razlikuje od drugih mest;
- oblikovalski standardi za Burso bi morali opredeliti splošna oblikovalska načela za ohranjanje in izboljšanje vizualne podobe in identitete mesta ter zagotoviti visoko oblikovalsko kakovost novogradenj po vsem mestu.

Lokalne /tematske oblikovalske usmeritve:

- okvir za urbanistično oblikovanje in urejanje javnih prostorov v središču Burse bi moral biti izdelan v obliki prospekta, v katerem so predstavljene fizična oblika mestnega središča in možnosti njegove preobrazbe v naslednjih desetletjih;
- lokalni razvojni okvir za območja kulturne dediščine v Bursi in Cumalıkızıkı bi moral vsebovati tematske smernice za zaščito in povečanje izjemne univerzalne vrednosti območij svetovne kulturne dediščine v Bursi, hkrati pa spodbuditi naložbe in gradnjo, ki zagotavljajo zdrav gospodarski razvoj in podpirajo trajnostno regeneracijo.

Stavbne /tehnične oblikovalske usmeritve:

- smernice za ohranjanje lokalnih značilnosti Hanlarja se lahko nanašajo na ulično krajino, spomeniško zaščitene stavbe, krajino, razsvetljavo, varnost pešcev in kolesarjenje.

Da bi bile smernice v praksi uporabne za Hanlar, bi morale upoštevati tudi pričakovanja lokalnih prebivalcev in obrtnikov. Na podlagi študije primera sta avtorici izdelali matriko napak pri reševanju oblikovalskih vprašanj in opravili pet analiz, da bi ugotovili, katere napake izstopajo v Hanlarju (preglednica 2).

Na podlagi teh izsledkov sta avtorici izdelali preglednico s priporočili glede procesa in konteksta priprave oblikovalskih smernic za Hanlar ob upoštevanju pogledov mestnih prebivalcev (obiskovalcev nakupovalnih središč) in lokalnih obrtnikov ter primerov iz Združenega kraljestva (preglednica 3).

6 Sklep

Glavni prispevek raziskave, opisane v članku, je združitev številnih metod vključevanja lokalne skupnosti v pripravo oblikovalskih smernic. Če je skupnost v to vključena že od vsega začetka, lahko lokalne oblasti lažje rešujejo težave, ki se pojavijo pri pripravi oblikovalskih smernic. To so potrdili tudi primeri iz Združenega kraljestva. V raziskovalni vzorec so bili vključeni obiskovalci nakupovalnih središč in lokalni obrtniki. Lokalne skupnosti v Bursi so sestavljene iz različnih skupin. To so običajno težje dostopne skupine, kot so narodnostne manjšine, mladi, starejši, skupine, ki se v mestu zadržujejo samo začasno (novi priseljenci, dnevni vozači in študenti), Romi, invalidi in starši samohranilci, med katerimi je nekatere težko vključiti v raziskave s področja kulturne dediščine, je pa njihovo vključenost pomembno zagotoviti.

Avtorici sta proučili, kako se zakonodajni okvir za vključevanje lokalne skupnosti oblikuje in uporablja pri trajnostnem ohranjanju območij kulturne dediščine v Združenem kraljestvu, in tako pridobili pomembne ugotovitve za Burso in Turčijo. Najprej bi bilo treba oblikovati pravne dokumente, ki pojasnjujejo, kako je treba skupnost vključevati v prostorsko urejanje in urbanistično načrtovanje, kot so na primer izjave o vključevanju skupnosti. Poleg tega je pomembno, da se v državah v razvoju, kot je Turčija, oblikovalska orodja zakonsko določijo. Ker se v Turčiji praksa urbanističnega oblikovanja šele razvija, so izkušnje lokalnih oblasti omejene, uporabniki pa so o tej

Preglednica 3: Priporočila glede procesa in konteksta priprave oblikovalskih smernic za območje Hanlarja v Bursi

Raven priporočil in podrobnosti
Državna/regionalna raven: vključevanje skupnosti v pripravo oblikovalskih smernic <ul style="list-style-type: none"> – Uporaba številnih metod vključevanja skupnosti v pripravo osnutkov oblikovalskih smernic – Javno posvetovanje <p>Objava osnutkov smernic na spletni strani občine</p> <p>Javna predstavitev (v knjižnicah, muzejih in na glavnih trgih)</p> <ul style="list-style-type: none"> – Formalna mnenja <p>Razpošiljanje osnutkov smernic ustreznim ustanovam</p> <ul style="list-style-type: none"> – Zbiranje dokumentov – Izdelava poročila o javnem posvetovanju, vključno z odzivi občine – Objava poročila o posvetovanju
Raven province in mesta: izdelava sistema oblikovalskih usmeritev za Burso
<ul style="list-style-type: none"> – Cilji, ki se nanašajo na usklajenost s prostorskim kontekstom in merilom v predlagani oblikovalski smernici za Hanlar <p>Priprava ocene splošnih značilnosti Burse (kot v Bathu)</p> <p>Priprava oblikovalskih standardov za Burso (kot v Edinburgu)</p> <ul style="list-style-type: none"> – Splošna oblikovalska načela je treba oblikovati v pravilnem zaporedju različnih ravni. Za določitev in poenotenje mestne identitete na različnih ravneh je treba območja kulturne dediščine vključiti v nova razvojna območja, zaščititi mestne vedute in robove, izboljšati podobo in berljivost območij kulturne dediščine ter okrepiti in razširiti mrežo zelenih in javnih površin. – Po mnenju prebivalcev bi bilo treba določiti nove površine za pešce ali pešpoti za izboljšanje povezav med severnim in južnim ter vzhodnim in zahodnim delom mesta, treba bi bilo preprečiti stik pešcev in vozil, izboljšati berljivost turističnih poti in površin ter dostop do podhodov ter urediti nova parkirišča, ki bi bila povezana z javnim prometnim omrežjem. – Po mnenju lokalnih obrtnikov bi bilo treba določiti največjo dovoljeno višino in maso novih stavb, kar bi ohranilo naravno podobo Burse ter tradicionalno silhueto Hanlarja in njegovo usklajenost s človeškim merilom.
Raven mestnega središča (lokalna raven): izdelava sistema oblikovalskih usmeritev za Burso
<ul style="list-style-type: none"> – Cilji, ki se nanašajo na usklajenost s prostorskim kontekstom, ravnovesje med javnim in zasebnim prostorom ter prostorsko kakovost, usklajenost mešane rabe in usklajenost gostote pozidave z vrsto rabe <p>Izdelava okvira za urbanistično oblikovanje in urejanje javnih prostorov v središču Burse (kot v primeru Liverpoola)</p> <p>Priprava lokalnega razvojnega okvira za območja kulturne dediščine v Bursi in Cumalıkıziku (kot v primeru Liverpoola)</p> <ul style="list-style-type: none"> – Treba je oblikovati splošna oblikovalska načela, na podlagi katerih bi se ustvarili živahni in privlačni kraji, poleg tega pa bi se okrepila tudi lokalna identiteta ter oblikovale razpoznavna urbana oblika in koherentne prostorske ureditve. – V skladu s pričakovanji lokalnih obrtnikov in mestnih prebivalcev bi bilo treba spodbuditi gradnjo in prostorske ureditve z mešano rabo, zlasti ureditev novih prostorov za kulturne in rekreativne dejavnosti, ki bi omogočali, da bi jih uporabljalo več različnih uporabnikov. V okviru oblikovalskih delavnic bi bilo treba izdelati konceptualne tematske oblikovalske predloge.
Lokalna raven (raven javnih prostorov): izdelava sistema oblikovalskih usmeritev za Burso
<ul style="list-style-type: none"> – Cilji, ki se nanašajo na dostopnost in pretočnost ter usklajenost gostote pozidave z vrsto rabe <p>Izdelava okvira za urbanistično oblikovanje in urejanje javnih prostorov v središču Burse (kot v primeru Liverpoola)</p> <p>Priprava lokalnega razvojnega okvira za območja kulturne dediščine v Bursi in Cumalıkıziku (kot v primeru Liverpoola)</p> <ul style="list-style-type: none"> – Za izboljšanje dostopa za pešce v Hanlarju bi bilo treba v skladu z načeli univerzalnega oblikovanja določiti standarde za urejanje ulic, pločnikov, prehodov za pešce in klančin. – V skladu s pričakovanji lokalnih obrtnikov in mestnih prebivalcev glede ureditve ulic, zaprtih za promet, ki imajo razpoznavne lokalne značilnosti in so dejavne 24 ur na dan, bi bilo treba oblikovati predpise, ki povečajo prostorsko udobje, npr. kvantitativne in kvalitativne standarde za servisne objekte (turistične informacije, stranišča, previjalnice za dojenčke itd) ter ulično opremo (razsvetljavo, površine za sedenje itd).
Raven javnih prostorov in stavb: izdelava sistema oblikovalskih usmeritev za Burso
<ul style="list-style-type: none"> – Cilji, ki se nanašajo na usklajenost s prostorskim kontekstom ter trajnostno gradnjo in okoljem <p>Izdelava podrobnih smernic za ohranjanje lokalnih značilnosti in posebnosti Hanlarja (kot v primeru Batha, Liverpoola in Edinburga)</p> <ul style="list-style-type: none"> – Za ohranjanje izvirne identitete zgodovinskih stavb in njihovo obnovo v skladu z veljavnimi zahtevami bi bilo treba določiti splošna načela za popravila ter zunanje in notranje spremembe spomeniško zaščitene stavb.

Vir: avtorici

tematiki premalo ozaveščeni. V raziskavi sta avtorici uporabili številne metode vključevanja skupnosti in ustreznih akterjev. Če lokalne oblasti javno posvetovanje izvajajo v elektronski obliki, je postopek dostopnejši in hitrejši, pripombe in predlogi pa se lahko učinkoviteje ocenijo. Poleg tega je treba opredeliti tudi metode nadzora in spremljanja ter načine prejemanja povratnih informacij o tem, ali se nasveti v smernicah za Hanlar dejansko tudi izvajajo. Nadzor bi lahko izvajal strokovni odbor enote za upravljanje območij kulturne dediščine v Bursi, uporabo smernic pa bi lahko spodbujali z ozaveščanjem mestnih prebivalcev in lokalnih obrtnikov ter nagrajevanjem primerov uspešnega izvajanja smernic.

Ker je v Turčiji 18 območij, ki so na seznamu Unescove svetovne dediščine, so na področju raziskav kulturne dediščine potrebni sistematski pristopi. Za ta območja bi bilo treba usklajeno izdelati oblikovalske smernice z načrti za njihovo upravljanje. Raziskava, predstavljena v članku, zato pomembno prispeva k pripravi oblikovalskih smernic, saj pojasnjuje, kako se lahko model participativne priprave oblikovalskih smernic izvaja na območjih kulturne dediščine.

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Viri in literatura

Aksoy, A., in Enlil, Z. (2012): Kültürel miras yönetiminde çağdaş yaklaşımlar. V: Aksoy, A., in Ünsal, D. (ur.): *Kültürel miras yönetimi*, str. 3–28. Eskişehir, Anadolu Üniversitesi Web-Ofset.

BNESEC (2005) = Bath & North East Somerset Council (2005): *Streetscape manual*. Dostopno na: http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/SPDs/streetscape_manual_adopted.pdf (sneto 27. 2. 2017).

BNESEC (2007) = Bath & North East Somerset Council (2007): *Statement of community involvement*. Dostopno na: <http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/LDFGeneral/StatementofCommunityInvolvement-AdoptedDocument.pdf> (sneto 27. 2. 2017).

BNESEC (2013) = Bath & North East Somerset Council (2013): *City of Bath World Heritage Site Setting*. Dostopno na: https://www.bathworldheritage.org.uk/sites/world_heritage_site/files/heritage/World%20Heritage%20Site%20Setting%20Supplementary%20Planning%20Document.pdf (sneto 27. 2. 2017).

BNESEC (2015) = Bath & North East Somerset Council (2015): *Bath Pattern book: Volume 01, Public realm framework*. Dostopno na: <http://www.bathnes.gov.uk/services/planning-and-building-control/major-projects/public-realm-and-movement/preparatory-projects> (sneto 27. 2. 2017).

BNESEC (2018) = Bath & North East Somerset Council (2018): *Supplementary planning documents (SPDs) and other useful guidance*. Dostopno na: <http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/supplementary-planning-documents-spd>s (sneto 19. 7. 2018).

Brombach, K., Simon-Philipp, C., in Kurth, D. (2013): District centre regeneration – A European perspective. *Proceedings of the Institution of Civil Engineers Urban Design and Planning*. 166(DP4), str. 229–240. DOI: 10.1680/udap.11.00007

Bursa Site Management Unit (2013): *Bursa and Cumalıkızık: the Birth of the Ottoman Empire*. Bursa, Bursa Metropolitan Municipality. Dostopno na: <http://alanbaskanligi.bursa.bel.tr/wp-content/uploads/unesco-adaylik-dosyasi-ve-ekleri-ingilizce-icin-tiklayiniz.pdf> (sneto 19. 7. 2018).

Carmona, M. (2009): Sustainable urban design: Definitions and delivery. *International Journal for Sustainable Development*, 12(1), str. 48–77.

Carmona, M. (2011): Decoding design guidance. V: Banerjee, T., in Loukaitou-Sideris, A. (ur.): *Companion to Urban Design*, str. 288–303. London, Routledge.

Carmona, M. (2017): The formal and informal tools of design governance. *Journal of Urban Design*, 22 (1), str. 1–36. DOI: 10.1080/13574809.2016.1234338

CEC (2003) = The City of Edinburgh Council (2003): *The Edinburgh standards for urban design*. Edinburgh. The City Development Department, Planning & Strategy.

CEC (2015) = The City of Edinburgh Council (2015) *Edinburgh street design guidance consultation report*.

CEC (2018a) = The City of Edinburgh Council (2018a): *Supplementary guidance*. Dostopno na: http://www.edinburgh.gov.uk/info/20013/planning_and_building/64/supplementary_guidance (sneto 27. 2. 2017).

CEC (2018b) = The City of Edinburgh Council (2018b): *Edinburgh design guidance*. Dostopno na: http://www.edinburgh.gov.uk/downloads/file/11650/edg_amended_october_2018 (sneto 28. 8. 2018).

CEC (2018c) = The City of Edinburgh Council (2018): *Edinburgh street design guidance*. Dostopno na: http://www.edinburgh.gov.uk/downloads/file/7165/edinburgh_street_design_guidance (sneto 28. 8. 2018).

CEC (2019) = The City of Edinburgh Council (2019): *Listed buildings and conservation areas*. Dostopno na: http://www.edinburgh.gov.uk/downloads/file/4510/listed_buildings_and_conservation_areas (sneto 28. 8. 2018).

Commission for Architecture & the Built Environment (2003): *The councillor's guide to urban design*. Dostopno na: <http://www.designcouncil.org.uk/sites/default/files/asset/document/councillors-guide-to-urban-design.pdf> (sneto 12. 11. 2017).

Cowan, R. (2002): *Urban design guidance: Urban design frameworks, development briefs and master plans*. London, Thomas Telford Ltd. DOI: 10.1680/udg.31357

DETR in CABE (2000) = Department of the Environment, Transport and the Regions in Commission for Architecture and the Built Environment (2000): *By design, urban design in the planning system: Towards better practice*. Dostopno na: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7665/158490.pdf (sneto 27. 2. 2017).

- Elnokaly, A. in Elseragy, A. (2013): Sustainable heritage development: Learning from urban conservation of heritage projects in non western contexts. *European Journal of Sustainable Development*, 2, str. 31–54. DOI: 10.14207/ejsd.2013.v2n1p31
- Hassler, U., Algreen-Using, G., in Kohler, N. (2002): Cultural heritage and sustainable development in SUIT. SUIT position paper (3). Dostopno na: http://www.lema.ulg.ac.be/research/suit/download/SUIT5.2c_PPaper.pdf (sneto 12. 11. 2017).
- ICOMOS (2005): Threats to world heritage sites 1994–2004: An analysis. Dostopno na: https://www.icomos.org/world_heritage/Analysis%20of%20Threats%201994-2004%20final.pdf (sneto 12. 11. 2017).
- Križnik, B. (2018): Transformation of deprived urban areas and social sustainability: A comparative study of urban regeneration and urban redevelopment in Barcelona and Seoul. *Urbani izziv*, 29(1), str. 83–95. DOI: 10.5379/urbani-izziv-en-2018-29-01-003
- Lang, J. (1996): Implementing urban design in America: Project types and methodological implications. *Journal of Urban Design*, 1(1), str. 7–22. DOI: 10.1080/13574809608724368
- LCC (2009) = Liverpool City Council (2009): Liverpool maritime mercantile city world heritage site supplementary planning document. Dostopno na: <http://liverpool.gov.uk/media/9644/world-heritage-site-spd.pdf> (sneto 27. 2. 2017).
- LCC (2013) = Liverpool City Council (2013): Statement of Community Involvement. Dostopno na: <https://liverpool.gov.uk/council/strategies-plans-and-policies/environment-and-planning/plan-making-in-liverpool/statement-of-community-involvement/> (sneto 27. 2. 2017).
- Madanipour, A. (1996): *Design of urban space: An inquiry into a socio-spatial process*. Chichester, John Wiley and Sons Ltd.
- Ministry of Environment and Urbanization (2015): Çevre ve şehircilik Bakanlığınca onaylanacak kentsel tasarım projelerinin hazırlanmasına ve değerlendirilmesine ilişkin yönerge. Dostopno na: <https://kms.kaysis.gov.tr/Home/Goster/131263> (sneto 28. 8. 2019).
- Ministry of Environment and Urbanization in Mimar Sinan Fine Arts University (2016): *Kentsel tasarım rehberleri, cilt 1*. Dostopno na: http://webdosya.csb.gov.tr/db/mpgm/editordosya/file/Kentsel%20Tasarim/Kentsel%20Tasarim%20Rehberleri/KENTSEL%20TASARIM%20REHBERLERI_Cilt1.pdf (sneto 27. 2. 2017).
- MPWS (2010) = Ministry of Public Works and Settlements (2010): *Bütünleşik kentsel gelişme stratejisi ve eylem planı. (KENTGES)* Dostopno na: https://webdosya.csb.gov.tr/db/kentges/editordosya/kentges_tr.pdf (sneto 28. 8. 2019).
- Nasser, N. (2003): Planning for urban heritage places: Reconciling conservation, tourism, and sustainable development. *Journal of Planning Literature*, 17(4), str. 467–479. DOI: 10.1177/0885412203017004001
- Özcan, K. (2009): Sürdürülebilir kentsel korumanın olabilirliği üzerine bir yaklaşım önerisi: Konya tarihi kent merkezi örneği. *ODTÜ Mimarlık Fakültesi Dergisi*, 26(2), str. 1–18. DOI: 10.4305/metu.jfa.2009.2.1
- Polat, S., Tümer Yıldız, H. Ö., in Dostoğlu, N. (2018): A user-oriented urban design guide model for cultural heritage sites: The case of Bursa Khans area. *Megaron*, 13(4), str. 584–596. DOI: 10.5505/megar.2018.32043
- Punter, J. (2007): Developing urban design as public policy: Best practice principles for design review and development management. *Journal of Urban Design*, 12(2), str. 167–202. DOI: 10.1080/13574800701306195
- Rezafar, A., in Turk, S. S. (2018): Urban design factors involved in the aesthetic assessment of newly built environments and their incorporation into legislation: The case of Istanbul. *Urbani izziv* 29(2), str. 83–95. DOI: 10.5379/urbani-izziv-en-2018-29-02-002
- Royal Town Planning Institute in Consultation Institute (2005): *Guidelines on effective community involvement and consultation*. Dostopno na: <http://www.rtpi.org.uk/media/6313/Guidelines-on-effective-community-involvement.pdf> (sneto 27. 2. 2017).
- Scottish Government (2010): *Planning advice note 3/2010 Community engagement*. Dostopno na: <http://www.gov.scot/Publications/2010/08/30094454/12> (sneto 27. 2. 2017).
- Tiesdell, S., Oc, T., in Heath, T. (1996): *Revitalizing historic urban quarters*. London, Butterworth-Heinemann.
- Van Oers, R. (2010): Managing cities and the historic urban landscape initiative – an introduction. V: Van Oers, R., in Haraguchi, S. (ur.): *Managing Historic Cities; World Heritage Papers*, 27, str. 7–17. Pariz, World Heritage Centre. Dostopno na: http://whc.unesco.org/documents/publi_wh_papers_27_en.pdf (sneto 10. 4. 2017).
- Von Hausen, M. A. (2013): *Dynamic urban design*. Bloomington, IN, iUniverse.
- Yeang, L. D. (2000): *Urban design compendium*. Dostopno na: <http://www.queenelizabetholympicpark.co.uk/-/media/lldc/local-plan/local-plan-examination-documents/other-strategy-papers/s34-urban-design-compendium.ashx?la=en> (sneto 27. 2. 2017).

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Bojan GRUM

Razlike v zaznavanju bivalnega okolja glede na starost prebivalcev

Zanimalo nas je, ali lahko morebitne statistično značilne razlike glede na demografske značilnosti udeležencev kažejo na medgeneracijsko različna doživetja bivalnega okolja. Za proučevanje smo uporabili metodologijo, ki sloni na kvantitativni metodi. Starejši udeleženci raziskave so poročali o večjem zadovoljstvu, večjem občutku družbeno-ekonomske homogenosti soseske, boljših sosedskih odnosih in boljših občutkih glede vzdrževanja grajenega okolja kot mlajši udeleženci. Zanimivo pa je, da mlajši udeleženci raziskave izražajo višjo stopnjo strinjanja glede vandalizma ter fizičnih in besednih napadov v soseski. Rezultati raziskave so bili v nasprotju s pričakovanji, saj predhodne študije pri starejših prebivalcih v primerjavi z mlajšimi ugotavljajo precej nižje stopnje strinjanja glede zadovoljstva z grajenim okoljem in pomembno višje sto-

pnje glede kriminalitete. Rezultate si razlagamo z ugotovitvami številnih raziskovalcev, skladno s katerimi starejši ljudje še vedno na splošno raje ostarijo v svojem domu, v znanem okolju, saj se pogosto bojijo, da bi zanje prehod v kolektivno ali institucionalno življenjsko okolje neizogibno pomenil izgubo neodvisnosti, kar posledično pomeni, da okolje sprejemajo tako, kot je. V raziskavi ugotavljamo še, da vrsta izkazanih statistično značilnih razlik kaže na to, da bivalno okolje, ki ima velik učinek na zadovoljstvo in dobro počutje, vendarle ne nudi enake kakovosti grajene socialne infrastrukture prav vsem uporabnikom, ki se ločijo po demografskih razlikah.

Ključne besede: socialna infrastruktura, grajeno okolje, demografske značilnosti, starejši, Slovenija

1 Uvod

Kakovost življenja, ki je danes v svetu eden prevladujočih konceptov, je le težka doumljiva brez kakovosti urbanega okolja, za katero pa je čedalje bolj značilno, da se oblikuje humano in naravnano k človeku (Temeljotov Salaj in Petrič, 2009). Kakovost urbanega okolja razumemo kot povezano celoto, ki zajema socialno dožemanje tega (npr. soseske) in kakovost grajenega bivalnega okolja. Ta naj bi zadovoljevala vse uporabnike. Adriaansova (2007) navaja, da so poglavitne spremenljivke, ki ustvarjajo kakovost urbanega okolja, tri: starost uporabnikov takega okolja, značilnosti bivalne skupnosti in dejanske značilnosti grajenega okolja. Prav zato nas je v raziskavi zanimalo, ali se kažejo statistično značilne razlike glede na starost udeležencev raziskave glede zaznavanja značilnosti bivalne skupnosti (splošno zadovoljstvo, družbeno-ekonomska homogenost, medsosedski odnosi, stopnja kriminalitete, občutek strahu in nelagodja, medsosedska pomoč) in glede na grajeno okolje (razvitost grajenega okolja, vzdrževanje in čistoča). Zanimalo nas je, ali se med udeleženci raziskave pojavljajo statistično značilne razlike, ki lahko kažejo na medgeneracijsko pomembna različna dožemanja bivalnega okolja ali, gledano širše, dožemanja grajene socialne infrastrukture, v kateri živijo.

Stopnja razvitosti kraja vpliva na stopnjo zadovoljstva uporabnikov in stopnjo zadovoljevanja njihovih potreb (Missimer idr., 2017; Sierra idr., 2017, 2018). Številni avtorji, kot so Baumeister in Leary (1995) ter Engle in Altschuld (2014), so poudarili, da je treba upoštevati predvsem potrebe, te morajo v vseh razmerah delovati na način razmišljanja, čustva in vedenje. Če potrebe niso izpolnjene, je treba upoštevati negativne posledice take neizpolnitve. Kadar potrebe niso izpolnjene, bi se moral njihov objektivni pomen povečati ali zmanjšati. Avtorji so opozorili še, da je treba posebno pozornost nameniti potrebam, ki so skupne vsem. Kulbickienė (2004) meni, da potrebe izražajo usmeritve in izbire uporabnikov. Analiza potreb v zvezi s socialno infrastrukturo je zato razumljena kot ocena povpraševanja po storitvah in objektih (Weber idr., 2016). Opredelitev potreb je postopek opisovanja problemov ciljne populacije in možnih rešitev teh težav (Vaznonienė in Pakeltienė, 2017). Analiza potreb se zato osredotoča na prihodnost, tj. na to, kaj je treba storiti, in ne na to, kar je bilo storjeno (Vaznonienė in Pakeltienė, 2017).

V članku razumemo grajeno socialno infrastrukturo kot strukturo, ki je zgrajena na podlagi navedenih potreb uporabnikov, njena uporabnost pa se meri z ravno zadovoljstva ali dobrega počutja teh uporabnikov. Grajena socialna infrastruktura je eden od prevladujočih dejavnikov, ki zagotavlja zadovoljevanje osnovnih človeških potreb (Frolova idr., 2016). Če socialna infrastruktura ustreza potrebam in pričakovanjem prebivalcev,

to pomeni večjo kakovost njihovega življenja. Če pa potreb prebivalcev ne zadovoljuje ali ne omogoča izbire, se pojavljajo posebna socialna in gospodarska vprašanja, ki vplivajo na dobro počutje prebivalcev (Vaznonienė, 2015). Dobro počutje kaže na kakovost življenja. Študij, s katerimi bi želeli ugotoviti razmerja med dejavniki blaginje prebivalstva in stopnjo razvoja družbene infrastrukture v skupnosti, ni veliko. Eno podobnih študij je opravil Popov (2017): raziskoval je razmerja med prometno infrastrukturo in kazalniki dobrega počutja, in to s korelacijsko analizo na podlagi podatkov latvijskega statističnega urada. Njegova raziskava odpira široko področje za nadaljnje proučevanje ter vprašanja in probleme za nadaljnje podrobnejše analize ter nas je spodbudila k podrobnejši analizi posameznih dejavnikov v soseski, tj. kako jih uporabniki dojemajo, in grajenega okolja glede na osnovne demografske značilnosti udeležencev. Kot vhodni demografski dejavnik raziskave ločimo tri starostne skupine udeležencev raziskave: udeleženci, stari do 35 let, spadajo v mlajšo generacijo, udeleženci, stari od 35 do 65 let, spadajo v srednjo generacijo, udeleženci, starejši od 65 let, pa spadajo v starejšo generacijo. Pri tem sledimo delitvi, ki jo navaja Milošević Arnoldova (2003). V naši študiji obravnavamo starejše kot enotno skupino, tj. osebe, starejše od 65 let. To starostno mejo postavlja tudi Statistični urad Slovenije.

2 Zaznavanje grajenega okolja

Erdogan in sodelavci (2008) poudarjajo, da na splošno zadovoljstvo z nastanitvijo neposredno vplivajo zaznane življenjske razmere, te pa so povezane z zadovoljstvom z dejanskim okoljem, z družbenimi odnosi, z delovanjem lokalnih oblasti in zaznano kakovostjo okolja in objektov. Mnenja prebivalcev o njihovi soseski ponujajo pomembne vpogled v to problematiko. Kot navaja Adriaansova (2007), ta mnenja osvetlijo, kateri vidiki imajo večji učinek na splošno zadovoljstvo glede bivalnega okolja. Stanovanjska okolja lahko delno proučujemo z objektivnimi merili, kot so obdobje gradnje, arhitekturni slog, prostorska struktura, količina zelenih površin in geografska lega. V zvezi z ugotovitvami o zadovoljstvu v soseskah sta Sirgy in Cornwellova (2002) značilnosti sosesk, ki vplivajo na zadovoljstvo, razvrstila v dejanske značilnosti (npr. vzdrževanje domov in dvorišč, urejanje okolice in ulična razsvetljava, preobremenjenost s hrupom in raven hrupa, dostop do objektov in kakovost okolja), socialne značilnosti (interakcije s sosedi, povezanost skupnosti, prostor za igro na prostem, stopnja kriminalitete, občutek zasebnosti doma) in gospodarske značilnosti (vrednost stanovanja v soseski, življenjski stroški, socialno-ekonomski status soseske in nadstandard ali izboljšave soseske). Tudi številni drugi raziskovalci ugotavljajo, da na stanovanjsko zadovoljstvo vplivajo zelo raznovrstne objektivno in subjektivno zaznane razmere (Theodori, 2001; Grum in Temel-

jotov Salaj, 2013; Grum in Kobal Grum, 2015). Urbanisti velik pomen namenljajo socialnim vprašanjem in kakovosti življenja, kar kaže na to, da je stanovanje družbeno vprašanje, ki ne vključuje le njegove konstrukcije in okolja, temveč tudi zadovoljstvo s kakovostjo okolja (Sam idr., 2012). Arhitekti se strinjajo z urbanisti, da to posledično vpliva na kakovost življenja in psihosocialne vidike prebivalcev (Mohit idr., 2010). Raziskovalci zatrjujejo, da je stanovanjsko zadovoljstvo odsev zadovoljstva in radosti v stanovanjskem območju v soseski. To vključuje socialne in sosedske odnose, družbene dejavnosti, objekte za družbene dejavnosti in komunalne storitve (Sam idr., 2012). Poleg zadovoljstva, družbeno-ekonomske homogenosti in socialne stabilnosti soseske je pomemben tudi občutek varnosti, kar številne raziskave povezujejo s stopnjo kriminalitete v okolju (Newman, 1972, Meško, 2001; Grum, 2017). Kot navaja Meško (2001), naj bi oblikovanje prostora zagotavljalo strukturo, ki odvrta od kriminalitete, torej naj bi zunanje značilnosti okolja temeljile na lastnostih, ki kažejo na to, da je okolje pod nadzorom in kot tako naj bi v ljudeh vzbujalo občutek varnosti. V takem okolju naj bi se spodbujali večja skrb zanj, več stikov s sosedi (dobri medsosedski odnosi) in večja medsosedska pomoč, tudi zadovoljstvo prebivalcev z lastno nepremičnino naj bi bilo večje (Grum, 2017). Newman (1972) te dejavnike združuje v teritorialnost (občutek pripadnosti soseski), naravno nadzorstvo (zaznavanje družbeno-ekonomske homogenosti, prisotnost policije, varnostnih služb, gasilcev), zunanjo podobo (vzdrževanje, urejeni parki, parkirišča, sprehajalne poti) in okolje (razvitost grajene socialne infrastrukture).

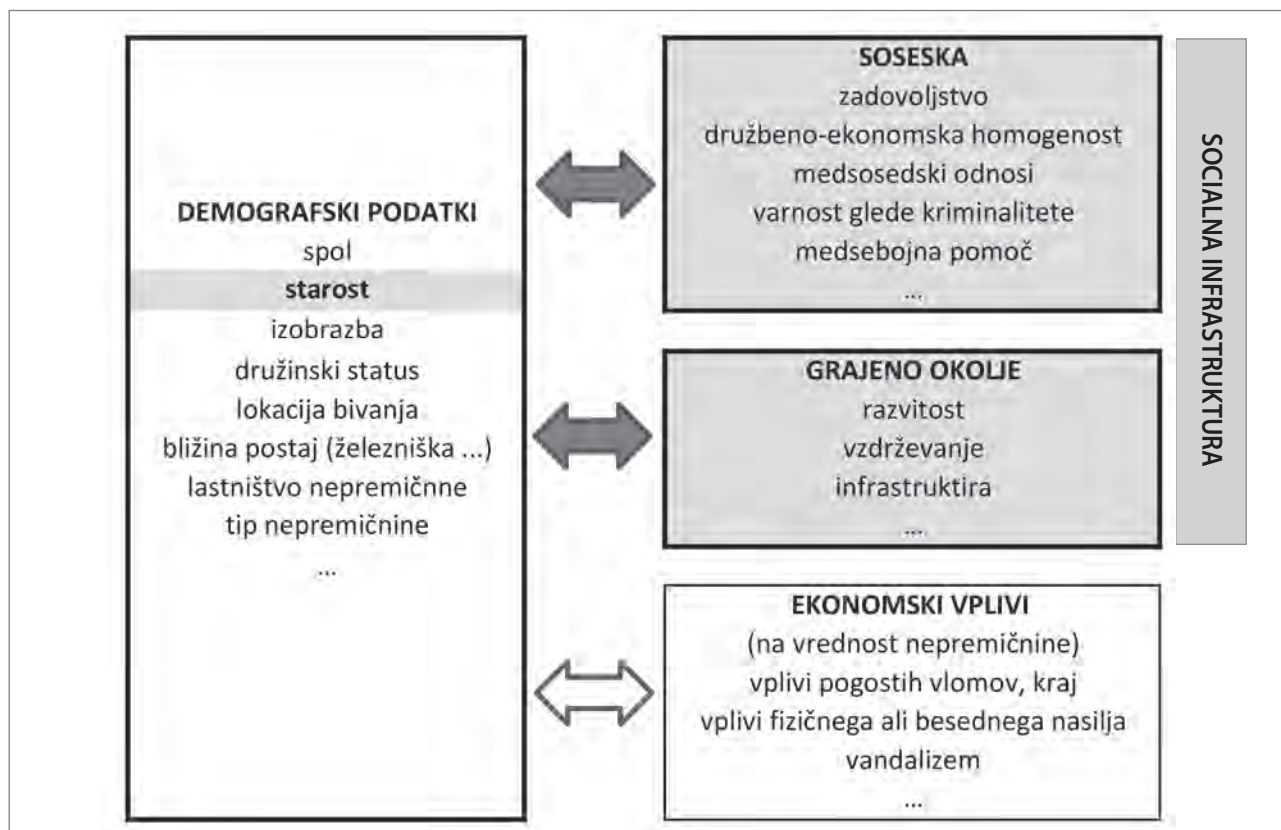
V zvezi s starostjo udeležencev ugotavljamo, da številne raziskave kažejo, da si starejši želijo čim dlje časa ostati v svojem domu, torej v znanem okolju, in da želijo, kolikor je mogoče, dolgo ohraniti svojo neodvisnost in samostojnost (Rojc idr., 2001; Sabia, 2008; Costa-Font idr., 2009; Wiles idr., 2009). Roy in sodelavci (2018) so ugotovili, da pri starejših na preselitve pomembno vplivajo dejavniki, povezani z grajenim okoljem, in dejavniki, povezani s socialnim, psihološkim, psihosocialnim in prostorsko-časovnim kontekstom. Starejši ljudje še vedno na splošno raje ostarijo v svojem domu (Harper in Bayer, 2000; Greenwald idr., 2003; Secker idr., 2003; Wylde, 2008), pogosto zato, ker se bojijo, da bo prehod v kolektivno ali institucionalno življenjsko okolje neizogibno pomenil izgubo neodvisnosti (Parry idr., 2004; Imamoglu, 2007). Prostor, ki se nanaša na odnose starejših z njihovim življenjskim okoljem kot simbolno predstavitev doma kot neodvisnost (Parry idr., 2004), je lahko temelj za nadaljnjo konceptualno izpopolnitev (Kemp idr., 2012). Vendar številne raziskave kažejo še, da lahko nevdrževano grajeno okolje prepreči telesno aktivnost med starejšimi (Balfour in Kaplan, 2002; Strath idr., 2007; Mendes de Leon idr., 2009; Gallagher idr., 2010). Zato so starejšim še posebno pomembni specifični vidiki grajenega okolja (Grum, 2017). Številne raziskave kažejo na učinek ne-

katerih demografskih dejavnikov, npr. starost prebivalcev, na raven izražene strahu in na interakcijo med socialno strukturo udeležencev in njihovim doživljanjem strahu (Ferguson in Mindel, 2007). Občutek pripadnosti neki skupnosti lahko ljudem pomaga, da bolj zaupajo svojim sposobnostim, s tem pa se ublaži občutek za nevarnost viktimizacije in se zmanjša strah (Meško idr., 2012). Po drugi strani lahko mlajši udeleženci raziskave grajeno okolje in odnose v njem razumejo drugače. Uršič (2005) je na primeru Savskega naselja v Ljubljani proučeval, ali dejavniki, kot so starost naselja in slabše vzdrževanje in posledično slabšanje bivalne kakovosti naselja, povzročajo selitve neke skupine prebivalstva ter večjo socialno nehomogenost in socialno nestabilnost. Ugotovil je, da se dobra petina stanovalcev namerava v bližnji prihodnosti preseliti in da o tem razmišljajo predvsem prebivalci, stari do 40 let.

Elementi grajenega okolja vplivajo na obnašanje uporabnikov. Če je bivalno okolje urejeno, čisto, vzdrževano, se pričakuje tudi, da bo posamezna stanovanjska stavba ohranjena, v sozvočju s sosesko in v skladu z zadevnim grajenim okoljem. Vendar grajeno okolje običajno vpliva na raven pričakovanega ali zahtevanega vzdrževanja stavbe, saj dobro vzdrževana infrastruktura običajno zahteva dobro vzdrževane nastanitvene zmogljivosti, sicer je podoba soseske neskladna, kar vpliva na počutje uporabnikov (Grum, 2017). Zgoraj navedene ugotovitve so nas vodile pri oblikovanju vprašalnika.

3 Metodologija

Raziskovanje, povezano z bivalnimi okoljem, se izvaja že dolgo, kot pa ugotavljajo Smrke, Blenkuš in Sočan (2018), v Sloveniji še ni bil objavljen sistematični pregled vprašalnikov, uporabljenih v podobnih študijah. Kot povzemajo, bi se morali raziskovalci bolj nagibati k uporabi že izdelanih vprašalnikov, strinjajo pa se, da na tem področju raziskovanja ni veliko vprašalnikov s preverjeno veljavnostjo (Smrke idr., 2018). Posledično naša metodologija sloni na kvantitativnem pristopu, na anketnem vprašalniku, ki smo ga oblikovali skladno z izsledki v literaturi Gruma in Temeljotov Salajeve (2011). Raziskovalna vprašanja, ki se porajajo pri raziskovanju kakovosti bivalnega urbanega okolja ali stopnji zadovoljstva uporabnikov in njihovih potreb, danes večinoma slonijo na interdisciplinarnih raziskovalnih pristopih, ki pa že sami po sebi odpirajo nova vprašanja. Odpirajo se neraziskana raziskovalna področja, ki jim kakovostni merski instrumenti ne sledijo vedno. Menimo pa, da nekatere protislovne ugotovitve v raziskovanju zadovoljstva z bivalnim okoljem in številna vprašanja, ki ostajajo odprta na področju ocenjevanja, niso posledica le pomanjkljivih metodoloških pristopov. Menimo, da je način merjenja zadovoljstva z bivalnim okoljem v empiričnih analizah pomemben, predvsem v nadaljevanju raziskav (kot je naša), ki nakazujejo pomembne



Slika 1: Izločeni faktorji, od katerih nas v nadaljevanju zanima povezava med demografskimi podatki (starost), sosesko in grajenim okoljem (ilustracija: avtor)

odgovore na raziskovalna vprašanja, in sicer, prvič, v smislu odpravljanja morebitnih zgoraj navedenih vplivov na dobljene rezultate in, drugič, v smislu potrditve ponovljive in preverjene metodologije ali merskih instrumentov.

Spoznavni cilji raziskave so opisni (opis značilnosti in stanja) in pojasnjevalni (ugotovitev in pojasnitev medsebojnih odvisnosti). Osnova za izvedbo raziskave so rezultati analize, opravljene po proučevanju znanstvene literature, podane v prejšnjem poglavju. Raziskavo smo načrtovali v dveh fazah (Grum in Temeljotov Salaj, 2011). V prvi fazi smo načrtovali oblikovanje vprašalnika in ugotavljanje ustreznosti metrijskih elementov vprašalnika. V ta namen smo izvedli pilotsko raziskavo na ustreznem vzorcu ($N = 55$). Podatki so bili zbrani s spletnim anketiranjem v letu 2018. Vprašalnik je strukturiran in zaprtega tipa. Podatke smo obdelali s programom SPSS. Udeleženci so na vprašanja odgovarjali z uporabo Likertove lestvice od 1 do 5, pri čemer vrednost 5 pomeni popolno strinjanje, vrednost 1 pa popolno nestrinjanje. Vprašalnik vsebuje 26 vprašanj. Izvedli smo eksploratorno faktorjsko analizo, pri kateri se proučujejo povezave med spremenljivkami, in poskušali najti novo množico spremenljivk (manj kot merjenih spremenljivk), ki pomenijo to, kar je skupnega opazovanim spremenljivkam. Z rotiranjem smo iskali teoretično pomembne faktorje in čim preprostejšo faktorjsko strukturo. V raziskovanju pojmov, ki so

ključni, nismo mogli neposredno meriti. Merili smo jih posredno s kazalniki tistega, kar naj bi merili. Skladno z literaturo smo zbrali nekaj neposredno merljivih spremenljivk, ki so kazalniki pojma (konstrukta), ki ga želimo meriti, nato pa smo poskušali razkriti, ali so povezave med izbranimi opazovanimi spremenljivkami pojasnjljive s predpostavljeno nemerljivo spremenljivko, ali pa je morda treba postaviti kompleksnejšo strukturo povezanosti. Cilj je ugotoviti, ali so zveze med opazovanimi spremenljivkami pojasnjljive z manjšim številom posredno opazovanih spremenljivk. S faktorjsko analizo smo tako izločili štiri faktorje, ki so pojasnili več kot 63,88 odstotka variacije, kar je več, kot je predpisani minimum 60 odstotkov (Bastič, 2006). Faktorji, ki jih je izločila faktorjska analiza, se pokrivajo s faktorji, ki smo jih združevali v vprašalniku. S prvim faktorjem so visoko nasičene postavke, ki po vprašalniku spadajo na področje dejavnikov socialne strukture in ki opisujejo značilnosti soseske, kot jo zaznavajo udeleženci (18,15 %) (zadovoljstvo, družbeno-ekonomska homogenost, medsosedski odnosi, varnost glede kriminalitete, medsebojna pomoč ipd.). Z drugim faktorjem so visoko nasičene postavke, ki po vprašalniku spadajo na področje dejavnikov ekonomskih vplivov na vrednost nepremičnin (17,07 %) (vplivi pogostih vlomov, fizičnega ali besednega nasilja, vandalizem ipd.). S tretjim faktorjem so visoko nasičene postavke, ki po vprašalniku spadajo na področje grajenega okolja (14,97 %) (razvitost infrastrukture, vzdrže-

Preglednica 1: Prikaz rezultatov analize variance

Spremenljivke		Vsota kvadratov	df	Srednji kvad.	F	p
Infrastruktura (policija, gasilci ...)	*	12,257	4	3,064	2,473	0,043
Zadovoljstvo z nepremičnino		1,541	4	0,385	0,370	0,830
Družbeno-ekonomska homogenost		2,949	4	0,737	1,088	0,362
Medsosedski odnosi	*	6,460	4	1,615	2,285	0,050
Pogostost kriminalitete	*	31,301	4	7,825	2,489	0,042
Splošni občutek strahu		10,121	4	2,530	1,470	0,209
Medsebojna pomoč		1,421	4	0,355	0,465	0,762
Razvitost grajenega okolja	*	13,393	4	3,348	3,055	0,016
Vzdrževanje grajenega okolja		4,436	4	1,109	1,402	0,232

* Razlika je statistično značilna ($p < 0,05$).

** Razlika je statistično značilna ($p < 0,01$).

*** Razlika je statistično značilna ($p < 0,001$).

vanje ipd.). Faktorska analiza uvršča spremenljivko čistoča soseske kot samostojen faktor (14,67 %), vendar so zaznane močne korelacije z dejavniki grajenega okolja (npr. negativna korelacija med dobrim vzdrževanjem in slabo čistočo izkazuje vrednost $-0,55$), zato smo jo teoretično uvrstili v sklop zadnje-avedenih dejavnikov, v nadaljevanju pa tega faktorja nismo obravnavali. Obravnavali smo torej tri faktorje, ključne za našo raziskavo. Izločene faktorje prikazuje slika 1, ki poudarjeno kaže, kaj nas je zanimalo v raziskavi in kaj je predmet nadaljnjih analiz.

Smiselnost uporabe faktorjske analize smo preizkusili z Bartlettovim testom sferičnosti ($BT = 759,61$), katerega velika statistična zanesljivost kaže na to, da je izločene faktorje mogoče interpretirati (Fulgosi, 1984). Velika vrednost tega statističnega podatka potrjuje smiselnost uporabe te metode (Bastič, 2006). Poleg Bartlettovega testa sferičnosti smo uporabili Keiser-Meyer-Olkinovo statistiko ($KMO = 0,563$). Uporaba faktorjske analize je smiselna pri veliki vrednosti tega statističnega podatka, to je pri vrednosti, ki je večja od 0,5 (Bastič, 2006). Zanesljivost vprašalnika smo preverili z alfa koeficientom notranje skladnosti, gre za t. i. Cronbachov koeficient zanesljivosti alfa. Koeficient zavzema vrednosti med 0 in 1, zanesljivost pa je sprejemljiva, če koeficient preseže vrednost 0,60 (Bastič, 2006). Koeficient za celoten vprašalnik kaže vrednost 0,603. Cronbachov koeficient notranje skladnosti kaže za prvi izločeni faktor socialne infrastrukture (soseska) vrednost 0,643, za drugi izločeni faktor v socialni infrastrukturi (grajeno okolje) pa vrednost 0,663.

Druga faza je bila osrednja raziskava prečnega tipa. Uporabili smo izdelan vprašalnik iz pilotske študije. Zaradi tega smo pri zbiranju podatkov uporabili metodo snežne kepe (Lobe, 2006). Pri uporabi te vrste vzorčenja se za oblikovanje vzorca proučevane skupine uporabljajo osebna poznanstva. Izbere se manjši

vzorec oseb, ki odgovarjajo na vprašalnik, obenem pa k izpolnjevanju povabijo svoje znance (Klinc idr., 2010). Vsak naslednji anketiranec naj bi zagotovil nekaj novih anketirancev. Prednost tega vzorčenja je predvsem v hitrem dopolnjevanju vzorca, ki pa je odvisen samo od začetne izbire populacije. To je obenem tudi slabost, saj po začetni izbiri vzorca nad njim nimamo več nadzora. V anketi je sodelovalo 729 udeležencev. Od teh je bilo 250 udeležencev mlajših od 35 let (34,29 %), 362 jih je bilo starih med 35 in 65 let (49,66 %), 117 udeležencev pa je bilo starejših od 65 let (16,05 %). Med temi je bilo 12 udeležencev brezposelnih (1,65 %), 188 je bilo študentov (25,79 %), 431 zaposlenih (59,12 %), 98 pa upokojenih (13,4 %). Po spolu so bili udeleženci raziskave zastopani precej enakomerno: sodelovalo je 376 žensk (51,60 %) in 353 moških (48,40 %). Zanimalo nas je, katere so statistično značilne razlike glede na starost udeležencev, ki se navezujejo na sosesko, in katere so tiste, ki se navezujejo na grajeno okolje, kar skupaj razumemo kot grajeno socialno infrastrukturo.

4 Rezultati in interpretacija

Glede na zaznano močno korelacijo med starostjo in statusom zaposlenost (Pearsonov korelacijski koeficient $r = 0,57$) smo podatke naprej analizirali z multivariatno analizo variance (MANOVA), in sicer glede na starost in zaposlenost (glej preglednico 1). Tako smo preverili, ali tovrstna analiza kaže drugačne statistično značilne razlike opazovanih spremenljivk, kot jih v nadaljevanju kaže enosmerna analiza variance (ANOVA), kar bi lahko pomenilo, da zaposlitev pomembno vpliva na rezultate.

Statistično značilne razlike ($p < 0,01$) glede na starost in status zaposlitve se kažejo glede pomembnosti razvitosti infrastrukture, vezane na prisotnost policijskih postaj, gasilcev, varnostnih

Preglednica 2: Prikaz rezultatov enosmerne analize variance glede na starost udeležencev in grajeno socialno infrastrukturo

Spremenljivke		Vsota kvadratov	df	Srednji kvadr.	F	p
Infrastruktura (policija, gasilci ...)	*	7,374	2	3,687	2,975	0,050
Zadovoljstvo z nepremičnino	**	14,163	2	7,081	6,805	0,001
Družbeno-ekonomska homogenost	**	9,514	2	4,757	7,017	0,001
Medsosedski odnosi	***	11,23	2	5,615	7,946	0,000
Pogostost kriminalitete		0,126	2	0,063	0,020	0,980
Splošni občutek strahu		0,898	2	0,449	0,261	0,770
Medsebojna pomoč		3,617	2	1,809	2,366	0,095
Razvitost grajenega okolja	*	9,192	2	4,596	4,193	0,015
Vzdrževanje grajenega okolja	***	12,694	2	6,347	8,025	0,000

* Razlika je statistično značilna ($p < 0,05$).

** Razlika je statistično značilna ($p < 0,01$).

*** Razlika je statistično značilna ($p < 0,001$).

služb ipd., glede družbeno-ekonomske homogenosti soseske, medsosedskih odnosov, pogostosti pojava kriminalitete (vlomi, ropanje, vandalizem, fizični in besedni napadi) in glede razvitosti grajenega okolja. Rezultati kažejo, da se statistično značilne razlike med opazovanima faktorjema kažejo enakovredno, in sicer tako v okviru prvega faktorja (soseska) kot v okviru drugega faktorja (grajeno okolje) po dva značilna dejavnika. Podatke smo analizirali še z enosmerno analizo variance (ANOVA) glede na starost, kar smo prikazali v preglednici 2.

Statistično značilne razlike ($p < 0,01$) glede na starost in splošne značilnosti grajenega okolja se kažejo glede pomembnosti razvitosti infrastrukture, vezane na prisotnost policijskih postaj, gasilcev, varnostnih služb ipd., glede na zadovoljstvo z nepremičnino, družbeno-ekonomske homogenosti soseske, medsosedskih odnosov ter razvitosti in vzdrževanja grajenega okolja. Rezultati kažejo, da se statistično značilne razlike med opazovanima faktorjema izkazujejo neenakovredno. V okviru prvega faktorja (soseska) se izkazujejo štiri dejavniki, v okviru drugega faktorja (grajeno okolje) pa le dva značilna dejavnika.

Preglednica 3 izkazuje povprečne vrednosti strinjanja udeležencev glede na statistično značilne razlike, izkazane v preglednicah 1 in 2. Rezultati kažejo, da se statistično značilne razlike med opazovanima faktorjema izkazujejo dokaj enakovredno. Glede na navedeno menimo, da zaposlitev ne vpliva pomembno na iskane rezultate, čeprav s starostjo korelira. V okviru prvega faktorja (soseska) se tako izkazujejo štiri dejavniki, v okviru drugega faktorja (grajeno okolje) pa trije značilni dejavniki. Statistično značilne razlike v okviru opazovanih faktorjev (soseska in grajeno okolje) torej kažejo, da je izmed faktorjev, ki jih izloča faktorska analiza, najpomembnejši faktor soseska, v okviru katerega se statistično značilne razlike kažejo pri večini opazovanih dejavnikov.

Glede na bližino infrastrukture (policija, gasilci, varnostne službe) izkazujejo najmlajši udeleženci raziskave precej višjo stopnjo strinjanja kot starejši udeleženci raziskave ($M = 3,423$), kar pomeni, da starejši menijo, da je po njihovem zaznavanju tovrstna infrastruktura dlje od njihovega bivališča, kot to zaznavajo mlajši udeleženci raziskave. Glede na zadovoljstvo z nepremičnino, v kateri udeleženci raziskave trenutno bivajo, izkazujejo starejši precej višjo stopnjo strinjanja kot mlajši udeleženci raziskave ($M = 4,058$). Glede občutka, da je soseska, v kateri udeleženci raziskave bivajo, družbeno-ekonomska homogena in posledično stabilna, izkazujejo starejši udeleženci raziskave precej višjo stopnjo strinjanja kot mlajši ($M = 3,758$). Starejši udeleženci raziskave izkazujejo precej višjo stopnjo strinjanja tudi glede dobrih medsosedskih odnosov ($M = 3,717$). Rezultati torej kažejo, da starejši udeleženci raziskave izražajo visoko stopnjo zadovoljstva s svojim bivalnim okoljem. Pomen tega ugotavlja tudi Ramovš (2000), saj da so medčloveški odnosi enako pomembni kot materialna varnost. Kobal Grumova in Grum (2018) menita, da izključenost iz socialnega okolja povzroči osamljenost, izoliranost, občutek negotovosti in izgubo smisla življenja, zato je podpora starejšemu pri vključevanju v družbeno okolje izjemno pomembna. Rezultate delno pojasnjujemo z ugotovitvami Filipoviča, ki je s sodelavci za Slovenijo ugotovil, da pomen sosedov pri vseh vrstah opore s starostjo anketirancev narašča (Filipovič Hrast idr., 2005). Zanimivo pa je, da starejši udeleženci raziskave glede kriminalitete v soseski izražajo višjo stopnjo strinjanja z vlomi in ropanjem (krajno torbic, denarnic npr. na avtobusih) ($M = 3,717$), mlajši udeleženci raziskave v soseski izražajo višjo stopnjo strinjanja glede vandalizma ter fizičnih in besednih napadov ($M = 2,988$). Navedeno lahko pojasnimo z ugotovitvami Meška in drugih (Meško idr., 2012), da se kriminalitete najmanj bojijo mlajši, čeprav so prav ti najpogosteje viktimizirani. Občutek pripadnosti neki skupnosti lahko pomaga, da ljudje bolj zaupajo svojim sposobnostim, s tem pa se ošibi občutek za nevarnost viktimizacije in se zmanjša strah (Meško idr., 2012).

Preglednica 3: Povprečne vrednosti strinjanja udeležencev glede na zadovoljstvo udeležencev z nepremičnino, v kateri bivajo, in starost udeležencev raziskave

Dejavniki	Število udeležencev	Povprečje	Std. deviacija	Std. napaka povprečja	Interval zaupanja za povprečje		
					Spodnja meja	Zgornja meja	
Infrastruktura (policija, gasilci ...)	1	258	3,423	1,038	0,065	3,295	0,360
	2	376	2,926	1,155	0,060	2,808	3,043
	3	89	3,098	1,247	0,131	2,625	3,150
Zadovoljstvo z nepremičnino	1	260	3,842	0,889	0,055	3,734	3,951
	2	380	3,918	1,107	0,057	3,807	4,030
	3	85	4,059	1,062	0,115	3,830	4,288
Družbeno-ekonomska homogenost	1	258	3,636	0,778	0,048	3,540	3,731
	2	378	3,661	0,863	0,044	3,574	3,749
	3	87	3,759	0,876	0,094	3,572	3,945
Medsosedski odnosi	1	260	3,592	0,898	0,056	3,483	3,702
	2	380	3,663	0,833	0,043	3,579	3,747
	3	85	3,718	0,781	0,085	3,549	3,886
Pogostost kriminalitete	1	260	2,988	1,671	0,104	2,784	3,192
	2	378	2,854	1,883	0,097	2,664	3,045
	3	87	2,241	1,635	0,175	1,893	2,590
Razvitost grajenega okolja	1	258	3,372	1,044	0,065	3,244	3,500
	2	380	3,258	1,081	0,055	3,149	3,367
	3	87	3,299	0,966	0,104	3,093	3,505
Vzdrževanje grajenega okolja	1	258	3,457	0,851	0,053	3,353	3,562
	2	378	3,402	0,914	0,047	3,310	3,495
	3	87	3,586	0,909	0,097	3,392	3,780

Opomba: 1 (starost do 35 let), 2 (starost do 65 let), 3 (starost več kot 65 let).

Zanimivo je tudi, da glede razvitosti grajenega okolja (objekti, parkirišča, parki, sprehajalne poti ipd.) najvišjo stopnjo strinjanja izkazujejo mlajši udeleženci raziskave ($M = 3,372$), sledijo jim starejši ($M = 3,298$), udeleženci raziskave, ki spadajo v srednjo starostno skupino, pa izražajo najnižjo stopnjo strinjanja ($M = 3,257$), kar pomeni, da je prav ta starostna skupina najmanj zadovoljna z razvitim grajenim okoljem. Navedeno si razlagamo z rezultati raziskave Terčeka (2005), ki je podrobneje analiziral dejavnike, kot so: starost, kakovost stavb in stanovanja, medsosedski odnosi in prihodnje preference anketirancev. V zvezi z nezadovoljstvom z bivalnim okoljem ugotavlja, da je na prvem mestu težava s parkirišči (60,2 % anketirancev je nezadovoljnih), visoko pa je izraženo zadovoljstvo z varnostjo v soseski (52,7 %) in z medsosedskimi odnosi (56,9 %). Prav parkirišča so verjetno precej bolj zanimiva za aktivno, srednjo starostno skupino kot starejšo generacijo, ki je dnevno precej manj mobilna. Glede vzdrževanja grajenega okolja (ruševine, temni in neosvetljeni prehodi in sprehajalne poti, nevzdrže-

vani parki, podrta drevesa ipd.) izkazujejo starejši udeleženci raziskave precej višjo stopnjo strinjanja kot mlajši udeleženci raziskave ($M = 3,586$), kar nas preseneča. Pričakovali smo, da bodo starejši izražali precej nižjo stopnjo strinjanja, predvsem glede vzdrževanja grajenega okolja. Vendar rezultati kažejo, da so v splošnem starejši (v primerjavi z mlajšimi udeleženci raziskave) precej bolj zadovoljni, tako z značilnostmi bivalne skupnosti kot z dejanskimi značilnostmi grajenega okolja.

Rezultate si razlagamo z ugotovitvami številnih raziskovalcev, da starejši ljudje še vedno na splošno raje ostarijo v svojem domu, tj. v znanem okolju, ki ga sprejemajo tako, kot je, saj se pogosto bojijo, da bi zanje prehod v kolektivno ali institucionalno življenjsko okolje neizogibno pomenil izgubo neodvisnosti. Grum in Kobal Grumova (2018) poudarjata, da so sosedska omrežja pomemben del osebnih omrežij. Tako je mogoče sklepati, da je za zadovoljstvo z nepremičnino ali z bivalnimi dejavniki, v katere je vpeta potencialna nepremičnina

ali bivalno okolje (soseska), potrebno tudi optimalno subjektivno čustveno blagostanje. Hkrati je mogoče zbrane rezultate primerjati tudi z rezultati proučevanj razmeroma novega pojava na področju psiholoških dejavnikov, vezanih na nepremičnino, in sicer navezanosti na nepremičnino (Khozaei idr., 2012). Navezanost, ki je v psihologiji že znan in dokaj raziskan pojav (Howe, 2011), tako dobiva skozi poti raziskovanja odnosa uporabnikov do nepremičnin novo razsežnost. Zdi se namreč, da osebe, ki jim je pomembno, v kakšnem infrastrukturnem okolju živijo ali bi želele živeti, izražajo konstruktivno navezanost na nepremičnino tudi z višjim subjektivno čustvenim blagostanjem (Florek, 2011). Taka spoznanja lahko ključno vplivajo na ustvarjanje uspešne medgeneracijske stanovanjske politike. Staranje prebivalstva se ne zdi proces, ki bi ga morale družbe preprečiti, temveč proces, ki ga je treba razumeti kot rezultat in posledico načrtovanih ali zelenih procesov in ki zahteva prilagoditev socialnih institucij in storitev (Kerbler, 2011). Dobri prostorski odnosi sledijo kakovostnemu bivalnemu okolju le tedaj, kadar omogočajo tudi uresničevanje kar največ potreb prebivalcev (Zapušek in Kučan, 2009). Ti interesi in potrebe pa se spreminjajo glede na starost in socialni položaj v družbi.

5 Sklep

Posamezni tipi sosesk, ki izhajajo iz njihovih značilnosti, lahko med uporabniki izražajo različne probleme. Pri tem pa, kot navaja Adriaanova (2007), lokacija soseske niti ni tako pomembna, kot sta pomembna dožemanje uporabnikov in njihova raba prostora, pri čemer so poglavitve tri spremenljivke: starost uporabnikov, značilnosti bivalne skupnosti in dejanske značilnosti grajenega okolja. Prav zato nas je v raziskavi zanimalo, ali se kažejo statistično značilne razlike glede na starost udeležencev, značilnosti bivalne skupnosti (splošno zadovoljstvo, družbeno-ekonomska homogenost, medsosedski odnosi, stopnja kriminalitete, občutek strahu in nelagodja, medsosedska pomoč) in glede na grajeno okolje (razvitost, vzdrževanje in čistoča grajenega okolja). Zanimalo nas je, ali morebitne statistično značilne razlike, ki jih prepoznava udeleženci, lahko kažejo na medgeneracijsko različno dožemanje bivalnega okolja ali, gledano širše, dožemanje grajene socialne infrastrukture, v kateri živijo.

Rezultati v naši raziskavi kažejo, da so v splošnem starejši bolj zadovoljni tako z značilnostmi bivalne skupnosti kot z značilnostmi grajenega okolja in njegovim vzdrževanjem. Rezultate si razlagamo z ugotovitvami številnih raziskovalcev, da starejši ljudje še vedno na splošno raje ostarijo v svojem domu. V tem kontekstu nekritično branijo svoje bivalno okolje, ne glede na njegove pomanjkljivosti, saj se zaradi svoje ekonomske

neudeležnosti v družbi (upokojeni, omejeni z dohodki) ne čutijo več družbeno aktivni, da bi lahko pomembno vplivali na odpravo teh pomanjkljivosti. Zanimive so tudi ugotovitve Paina (2000), da raziskovalci v zadnjem času na starost vse bolj gledajo kot na kulturno, ne več kronološko kategorijo, kar pomeni, da dajejo poudarek posebnosti okoliščin in načinu življenja ljudi v različnih življenjskih obdobjih.

Rezultati kažejo na številne statistično pomembne razlike glede na starost udeležencev raziskave (medgeneracijski razkoraki). Statistično značilne razlike v okviru opazovanih faktorjev (soseska in grajeno okolje) kažejo, da je izmed vseh faktorjev, ki jih izloča factorska analiza, najpomembnejši faktor soseska, v okviru katerega se statistično značilne razlike kažejo pri večini opazovanih dejavnikov. Ugotavljamo, da ima bivalno okolje velik učinek na zadovoljstvo in dobro počutje prebivalcev, in kot mnogi drugi avtorji (Adriaanse, 2007; Kobal Grum in Grum, 2018) sklepamo, da urbanisti in oblikovalci prostora večinoma niso naredili presežka pri oblikovanju okolja v stanovanjskih soseskah, v katerih naj bi ljudje medgeneracijsko živeli udobno in uživali kar največjo kakovost bivalne socialne infrastrukture, in to ne glede na starostne razlike. Kot ugotavlja Sendi (2005), sodobni časi zahtevajo sodobne poglede na načrtovanje stanovanjskih območij. Načini načrtovanja, v katerih mnjenja in želje obstoječih ali potencialnih stanovalcev niso upoštevani, niso več sprejemljivi, ne delujejo več in ne vodijo več v najboljšo rabo zemljišča. Tako za prostorsko načrtovanje, pri čemer je še vedno osrednje vprašanje, kako zagotoviti ustrezno namensko rabo površin, ki bo v sovzvočju s cilji in usmeritvami družbenega razvoja in pri čemer vsi akterji nastopajo kot enakovredni partnerji (Ravbar, 2007), kot za načrtovanje stanovanjskih območij ostaja osrednje vprašanje, kako izkoristiti stanovanjsko namensko rabo zemljišča tako, da bo dosežena najboljša raba zemljišča. Pri tem to rabo lahko razumemo kot razširjeno opredelitev najgospodarnejše rabe zemljišča, tudi primerno podprte s pričakovanji, željami, hotenji ljudi in podobno. Opažanja so pomembna predvsem za ocenjevanje kakovosti življenja, ki je danes v svetu eden prevladujočih konceptov in je le stežka doumljiv brez razumevanja kakovosti urbanega okolja. Menimo, da bi bilo treba v nadaljnjih raziskavah še izboljšati kakovost merskih instrumentov v smislu uporabe obstoječih tujih vprašalnikov. Glede na navedeno tudi menimo, da je razumevanje opazovanih razlik glede na demografske značilnosti uporabnikov prostora ključno pri oblikovanju trajnostne stanovanjske politike.

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Viri in literatura

- Adriaanse, C. C. M. (2007): Measuring residential satisfaction: a residential environmental satisfaction scale (RESS). *Journal Housing Built Environment*, 22, str. 287–304. DOI: 10.1007/s10901-007-9082-9
- Balfour, J. L., in Kaplan, G. J. (2002): Neighborhood environment and loss of physical function in older adults: Evidence from the Alameda county study. *American Journal of Epidemiology*, 155(6), str. 507–515. DOI: 10.1093/aje/155.6.507
- Bastič, M. (2006): *Metode raziskovanja*. Maribor, Univerza v Mariboru, Ekonomsko poslovna fakulteta Maribor.
- Baumeister, R. F., in Leary, M. R. (1995): The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), str. 497–529. DOI: 10.1037//0033-2909.117.3.497
- Costa-Font, J., Mascarilla-Miró, O., in Elvira, D. (2009): Ageing in place? An examination of elderly people housing preferences in Spain. *Urban studies*, 46(2), str. 295–316. DOI: 10.1177/0042098008099356
- Engle, M., in Altschuld, J. W. (2014): Needs assessment: The perspective from the public sector. V: Altschuld, J. W., in R. Watkins (ur.): *Needs assessment: Trends and a view toward the future. New directions for evaluation*, str. 33–45. Hoboken, NJ, Wiley. DOI: 10.1002/ev.20101
- Erdogan, N., Akyol, A., Ataman, B., in Domkeci, V. (2008): Comparison of urban housing satisfaction in modern and traditional neighborhoods in Edirne, Turkey. *Social Indicators Research*, 81(1), str. 127–148. DOI: 10.1007/s11205-006-0018-7
- Ferguson, K. M., in Mindel, C. H. (2007): Modeling fear of crime in Dallas neighborhoods: A test of social capital theory. *Crime Delinquency*, 53(2), str. 658–679. DOI: 10.1177/0011128705285039
- Filipovič Hrast, M., Kogovšek, T., in Hlebec, V. (2005): Starostniki in njihova vpetost v sosedstva omrežja. *Družboslovne razprave*, 49/50, str. 205–221.
- Florek, M. (2011): No place like home: Perspectives on place attachment and impacts on city management. *Journal of Town & City Management*, 1(4), str. 346–354.
- Frolova, E. V., Vinichenko, M. V., Kirillov, A. V., Rogach, O. V., in Kabanova, E. E. (2016): Development of social infrastructure in the management practice of local authorities: Rends and factors. *International Journal of Environmental & Science Education*, 11(15), str. 7421–7430.
- Fulgosi, A. (1984): *Faktorska analiza*. Zagreb, Filozofski fakultet v Zagrebu.
- Gallagher, N. A., Gretebeck, K. A., Robinson, J. C., Torres, E. R., Murphy, S. L., in Martyn, K. K. (2010): Neighborhood factors relevant for walking in older, urban, African American adults. *Journal of Aging and Physical Activity*, 18(1), str. 99–115. DOI: 10.1123/japa.18.1.99
- Greenwald, M., Barrett, L. L., Ginzler, E., Copeland, A., Kochera, A., Straight, A. (2003): *These four walls. Americans 45+ talk about home and community*. Dostopno na: http://assets.aarp.org/rgcenter/il/four_walls.pdf (sneto 20. 10. 2018).
- Grum, B. (2017): Impact of facilities maintenance on user satisfaction. *Facilities*, 35(7-8), str. 405–421. DOI: 10.1108/f-03-2016-0034
- Grum, B., in Kobal Grum, D. (2015): A model of real estate and psychological factors in decision-making to buy real estate. *Urbani izziv*, 26(1), str. 82–91. DOI: 10.5379/urbani-izziv-en-2015-26-01-002
- Grum, B., in Temeljotov Salaj, A. (2011): Vloga lastnih in zunanjih dejavnikov pri konstrukciji vprašalnika za merjenje pričakovanih potencialnih pridobiteljev nepremičninskih pravic. *Anthropos*, 43 (1-2), str. 257–275. DOI: 10.5379/urbani-izziv-2010-21-02-004
- Grum, B., in Temeljotov Salaj, A. (2013): The comparison of expressed satisfaction and expectations of potential real estate buyers in Slovenia and Japan. *Facilities*, 31(1-2), str. 6–23. DOI: 10.1108/02632771311292482
- Harper, L., in Bayer, A. H. (2000): *Fixing to stay: A national survey of housing and home modification issues*. Washington, DC, AARP.
- Howe, D. (2011): *Attachment across the lifecourse*. London, Palgrave.
- Imamoglu, C. (2007): Assisted living as a new place schema. A comparison with homes and nursing homes. *Environment and Behavior*, 39, str. 246–268. DOI: 10.1177/0013916506289977
- Kemp, C. L., Ball, M. M., Hollingsworth, C., in Perkins, M. M. (2012): Strangers and friends: residents' social careers in assisted living. *Psychological Sciences and Social Sciences*, 67, str. 491–502. DOI: 10.1093/geronb/gbs043
- Kerbler, B. (2011): Prilaganje grajenega bivalnega okolja za potrebe starejših ljudi. *Geodetski vestnik*, 55(1), str. 57–69. DOI: 10.15292/geodetski-vestnik.2011.01.057-069
- Khozaei, F., Ramayah, T., Hassan, A. S., in Surlenty, L. (2012): Sense of attachment to place and fulfilled preferences, the mediating role of housing satisfaction. *Property Management*, 30(3), str. 292–310. DOI: 10.1108/02637471211233945
- Klinc, R., Turk, Ž., in Dolenc, M. (2010): Raziskava o rabi informacijsko-komunikacijskih tehnologij v Slovenski gradbeni industriji. *Gradbeni vestnik*, 59, str. 269–276.
- Kobal Grum, D., in Grum, B. (2018): The association between pro-environmental behaviour nad subjective well-being. V: Grum, B. (ur.): *Book of proceedings*, 3rd Conference of Interdisciplinary Research on Real Estate, (CIRRE), str. 43–53. Ljubljana, Institute of Real Estate Studies. DOI: 10.5379/urbani-izziv-en-2015-26-01-002
- Kulbickienė, L. (2004): Lietuvos gyventojų kultūriniai poreikiai: kultūros įstaigų vertinimas ir lankymas. *Sociologija. Mintis ir veiksmas*, 8(2), str. 64–71.
- Lobe, B. (2006): *Mixing qualitative and quantitative methods in the environment of new information-communication technologies*. Ljubljana, Univerza v Ljubljani, Fakulteta za družbene vede.
- Mendes De Leon, C. F., Cagney, K. A., Bienias, J. L., Barnes, L. L., Skarupski, K. A., Scherr, P. A., idr. (2009): Neighborhood social cohesion and disorder in relation to walking in community-dwelling older adults: A multilevel analysis. *Journal of Aging and Health*, 21(1), str. 155–171. DOI: 10.1177/0898264308328650
- Meško, G. (2001): Kriminalna prevencija z načrtovanjem in oblikovanjem okolja. *Socialna pedagogika*, 5(4), str. 445–468.
- Meško, G., Šifrer, J., in Vošnjak, L. (2012): Strah pred kriminaliteto v mestih in vaških okoljih v Sloveniji. *Varstvoslovje*, 14(3), str. 259–276.
- Milošević Arnold, V. (2003): Komunikacija med zaposlenimi in svojci stanovalcev socialnih domov. V: Zbornik predavanj. 14. strokovno srečanje Zveze društev medicinskih sester in zdravstvenih tehnikov Slovenije, Terme Zreče, 21. in 22. oktober 2003 (str. 43–49). Zreče, Zbornica zdravstvene nege Slovenije – Zveza društev medicinskih sester in zdravstvenih tehnikov Slovenije.
- Missimer, M., Robert, K. H., in Broman, G. (2017): A strategic approach to social sustainability - Part 1: exploring social system. *Journal of Cleaner Production*, 140, str. 32–41. DOI: 10.1016/j.jclepro.2016.03.170
- Mohit, M. A., Ibrahim, M., in Rashid, Y. R. (2010): Assessment of Residential Satisfaction in Newly Designed Public Low-Cost Housing in Kuala Lumpur, Malaysia. *Habitat International*, 34(1), str. 18–27. DOI: 10.1016/j.habitatint.2009.04.002

- Newman, O. (1972): *Defensive space*. New York, Macmillan.
- Pain, R. (2000): Place, social relations and the fear of crime: A review. *Progress in Human Geography*, 24(3), str. 365–387. DOI: 10.1191/030913200701540474
- Parry, J., Vegeris, S., Hudson, M., Barnes, H., in Taylor, R. (2004): *Independent living in later life*. Research Report No 216. Dostopno na: <http://campaigns.dwp.gov.uk/asd/asd5/rports2003-2004/rrep216.pdf> (sneto 5. 9. 2017).
- Popov, Y. (2017): Relations between wellbeing and transport infrastructure of the country. *Procedia Engineering*, 178, str. 579–588. DOI: 10.1016/j.proeng.2017.01.112
- Ramovš, J. (2000): Medgeneracijska povezanost, samopomoč in kakovostna starost. *Socialno delo*, 39(4–5), str. 315–329.
- Ravbar, M. (2007). Prostorsko planiranje - čemu? *Geodetski vestnik*, 51(2), str. 233–245.
- Roy, N., Bube, R., Despres, C., Freitas, A., in Legare, F. (2018): Choosing between staying at home or moving: A systematic review of factors influencing housing decisions among frail older adults. *PLoS One*, 13(1). DOI: 10.1371/journal.pone.0189266
- Rojo, P., Fernandez-Mayoralas, G., Pozo Rivera, E., in Manuel Rojo, A. (2001): Ageing in place: Predictors of the residential satisfaction of elderly. *Social Indicators Research*, 54(2), str. 173–208. DOI: 10.1023/a:1010852607362
- Sabia, J. (2008): There's no place like home: A hazard model analysis of aging in place among older homeowners in the PSID. *Research on Aging*, 30(1), str. 3–35. DOI: 10.1177/0164027507307919
- Sam, M., Fauzi, M., in Saadatian, O. (2012): Residential satisfaction and construction. *Journal of Scientific Research and Essays*, 7(15), str. 1556–1563.
- Secker, J., Hill, R., Villeneuve, L., in Parkman, S. (2003): Promoting independence: But promoting what and how? *Ageing and Society*, 23, str. 375–391. DOI: 10.1017/s0144686x03001193
- Sendi, R. (2005): Sodelovanje stanovalcev kot pogoj za uspešno izvedbo prenove stanovanjskih sosesk. *Urbani izziv*, 16(2), str. 5–15. DOI: 10.5379/urbani-izziv-2005-16-02-001
- Sierra, L., Yepes, V., in Pellicer, E. (2017): Assessing the social sustainability contribution of an infrastructure project under conditions of uncertainty. *Environmental Impact Assessment Review*, 67, str. 61–72. DOI: 10.1016/j.eiar.2017.08.003
- Sierra, L., Yepes, V., in Pellicer, E. (2018): A review of multi-criteria assessment of the social sustainability of infrastructures. *Journal of Cleaner Production*, str. 496–513. DOI: 10.1016/j.jclepro.2018.03.022
- Sirgy, M. J., in Cornwell, T. (2002): How neighborhood features affect quality of life. *Social Indicators Research*, 59, str. 79–114.
- Smrke U., Blenkuš, M., Sočan, G. (2018): Vprašalniki zadovoljstva z bivalnim okoljem: sistematični pregled. *Urbani izziv*, 29(2), str. 7–21. DOI: 10.5379/urbani-izziv-2018-29-02-001
- Strath, S., Isaacs, R., in Greenwald, M. J. (2007): Operationalizing environmental indicators for physical activity in older adults. *Journal of Aging and Physical Activity*, 15(4), str. 412–424. DOI: 10.1123/japa.15.4.412
- Temeljotov Salaj, A., in Petrič, G. (2009): Nepremičninski dejavniki organizacijske klime. V: Brezovec, A. Mekinc, J. (ur.): *Management, izobraževanje in turizem: kreativno v spremembe; Zbornik referatov*, str. 2870–2879. Portorož, Turistica,.
- Theodori, G. L. (2001): Examining the effects of community satisfaction and attachment on individual well-being. *Rural Sociology*, 66(4), str. 618–628. DOI: 10.1111/j.1549-0831.2001.tb00087.x
- Trček, F. (2005): Sociološka anketna raziskava, Prenova stanovanjskih sosesk v Ljubljani –Savsko naselje. *Urbani izziv*, 2005, 16(2), str. 24–35. DOI: 10.5379/urbani-izziv-2005-16-02-003
- Uršič, M. (2005): Spreminjanje bivalne kakovosti in stanovanjska mobilnost v Ljubljani, Naraščanje socialne nestabilnosti v večjih stanovanjskih soseskah? *Urbani izziv*, 16(2), 36–47. DOI: 10.5379/urbani-izziv-2005-16-02-004
- Vazonienė, G. (2015): The role of rural community enhancing rural social infrastructure changes. *Research for rural development*, 2, str. 176–182. DOI: 10.1515/euco-2017-0031
- Vazonienė, G., in Pakeltienė, R. (2017): Methods for the assessment of rural social infrastructure needs. *European Countryside*, 9(3), str. 526–540.
- Zapušek, A., in Kučan, A. (2009): Stanovanjske krajine in kakovost bivanja. Predstavitev ukrepov za izboljšanje bivalne kakovosti, *Annales*, 19(1), str. 1–18.
- Weber, B., Alfen, H. W., in Staub-Bisang, M. (2016): *Infrastructure as an Asset Class—Investment strategy, Sustainability, Project finance and PPP*. Hoboken, NJ, John Wiley & Sons. DOI: 10.1002/9781119226574
- Wiles, J. L., Allen, R. E. S., Palmer, A. J., Hayman, K. J., Keeling, S., in Kerse, N. (2009): Older people and their social spaces: A study of well-being and attachment to place in Aotearoa New Zealand. *Social Science & Medicine*, 68(4), str. 664–671. DOI: 10.1016/j.socsci-med.2008.11.030
- Wylde, M. A. (2008): The future of assisted living. Residents' perspectives, 2006–2026. V: Golant S. M. Hyde J. (ur.): *The assisted living residence. A vision for the future*, str. 169–197. Baltimore, MD, The Johns Hopkins University Press.

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Družbena interakcija v ograjenem naselju z ekonomsko mešano sestavo prebivalstva v Cibuburju v Zahodni Javi

Ograjena naselja veljajo za škodljivo obliko urbane segregacije, saj so to varovane stanovanjske soseske z ekskluzivno infrastrukturo. Cilj indonezijske vladne politike, povezane z zagotavljanjem cenovno uravnovežene stanovanjske oskrbe, je ustvariti stanovanjske komplekse ali naselja z ekonomsko mešano sestavo prebivalstva, ki spodbujajo interakcijo med družbenimi sloji in zmanjšujejo čedalje večje socialne razlike. Namen članka je potrditi pojav družbene interakcije med socialno-ekonomskimi sloji v naseljih z ekonomsko mešano sestavo prebivalstva. Za boljše razumevanje družbene interakcije med stanovalci so avtorji najprej proučili razloge za izbor tovrstne stanovanjske soseske, in sicer za vsak socialno-ekonomski sloj posebej. Za to so uporabili metodo vrednotenja po vselitvi na primeru ograjenega naselja v Cibuburju v Za-

hodni Javi, ki je znan po dobri kakovosti stanovanjskih sosesk in infrastrukture. Izsledki raziskave kažejo, da je varovanje še vedno glavni razlog za to, zakaj se ljudje odločijo živeti v tovrstnem ograjenem naselju. Zaradi manjše ekskluzivnosti naselja pa je čedalje manjša tudi pogostost uporabe tamkajšnje infrastrukture in površin, pripadniki posameznih družbenih slojev pa se raje kot s stanovalci istega stanovanjskega kompleksa v naselju družijo s pripadniki istega sloja v drugih stanovanjskih kompleksih, kar se ne ujema s cilji politike cenovno uravnovežene stanovanjske oskrbe.

Ključne besede: stanovanjske preference, cenovno uravnovežena stanovanjska oskrba, ekonomsko mešana sestava prebivalstva, varovana soseska

1 Uvod

Na stanovanjskem, urbanističnem in načrtovalskem področju razprave o ograjenih naseljih potekajo že vse od prejšnjega stoletja. V zadnjih treh desetletjih so ta naselja postala prevladujoča oblika stanovanjskih sosesk na vseh celinah (McKenzie, 2003), od Severne in Južne Amerike (Caldeira, 2000; Salcedo in Torres, 2004), Azije (King, 2004; Wu in Webber, 2004), Evrope (Gooblar, 2002) in Avstralije (Burke in Sebal, 2001) do Afrike (Kuppinger, 2008). Po zgradbi so podobna starodavnim ograjenim mestom z začetka razvoja človeške civilizacije (Low, 2001; Landman in Schonteich, 2002; Quintal, 2006), kot je Jeriho (Dupuis in Thorns, 2008), znamenitosti Prepovedano mesto v Peking (Wu, 2005), tradicionalnim arabskim mestom (Glasze in Alkhayyal, 2002), srednjeveškim evropskim mestom in kolonialnim mestom po svetu (Blakely in Snyder, 1997). Simbolizirajo obsežne varnostne ukrepe, fevdalno aristokracijo srednjega veka in gospodarsko moč (Bekleyen in Dalkilç, 2011).

Ograjena naselja ali skupnosti so opredeljena kot samoizolirane družbene skupine, ki se odločijo živeti v homogenih »enklavah« s povsem določenim življenjskim slogom (Parker, 2006) in se zaščititi pred pretečim kriminalom v mestu (Harvey, 1999) tako, da se obdajo z zidovi z zavarovanimi vhodi (Low, 2003). Grant in Mittelsteadt (2004) sta jih opredelila tudi kot stanovanjske soseske z zasebnimi cestami, nedostopnimi za nestanovalce, in zavarovanimi glavnimi vhodi. Značilnosti, ki ograjena naselja ločijo od drugih naselij, so varnostni ukrepi in ovire, ograjenost, vključeni javni objekti in infrastruktura, vrsta stanovalcev, lokacija, velikost, lastniška struktura in stanovanjska politika. Atkinson in Flint (2004) ograjeno skupnost opredeljujeta kot skupino ljudi, ki prevzamejo kolektivno odgovornost tako, da se obnašajo v skladu s skupnimi pravili, določenimi s pravnimi dogovori. Blakely in Snyder (1997) ograjena naselja delita na tri vrste glede na razpoložljivo infrastrukturo, ekskluzivnost in varnost. Prva vrsta ograjenih naselij je povezana s prostočasnimi dejavnostmi ter raznimi rekreativnimi in drugimi objekti in površinami, ki so na razpolago. Temelji na novih življenjskih slogih in potrošniških vzorcih, ki so posledica globalizacije, ki daje prednost lastnim interesom (Caldeira, 1996). Druga vrsta so t. i. prestižne skupnosti, katerih ekskluzivnost se kaže v velikosti hiš, ki vključujejo razne storitve za zagotavljanje zasebnosti. Pri tretji vrsti ograjenih naselij pa je poudarjena večplastnost varovanja, ki je posledica zahtev stanovalcev po večji varnosti. Ograjena naselja zaradi varnostnih ukrepov in obdajajočih zidov (Low, 2003) obetajo varno, privilegirano in prestižno življenje (Erkip, 2003) ter preprečujejo pristo uporabo infrastrukture in padanje vrednosti nepremičnin (Le Goix, 2005).

1.1 Cilji raziskave

V Indoneziji so prva ograjena naselja začela nastajati v osemdesetih letih 20. stoletja z razvojem novih mest v okolici Džakarte (Winarso, 2005). Njihova gradnja je posledica periurbanizacije, ki je v interesu premožnih (Winarso idr., 2015), in okrepljene prostorske segregacije (Firman, 2004). Tovrstne ekskluzivne stanovanjske soseske stanovalce enega sloja ločujejo od stanovalcev drugih slojev, saj zmanjšujejo njihovo interakcijo z drugimi, zlasti revnejšimi prebivalci v okolici (Firman, 2004).

V osemdesetih letih 20. stoletja je vlada začela spodbujati tuje neposredne naložbe, ki naj bi pospešile gospodarsko rast (Leaf, 1994). Posledično je Džakarta do leta 1995 doživljala pravi nepremičninski razcvet, pri čemer se je cena zemljišč vsako leto trikrat povišala (Leaf, 1993). Gradnja ograjenih naselij se je razširila na bližnja mesta in občine, kot so Depok, mesto in občina Bogor, mesto in občina Tangerang, mesto Tangerang Selatan, ter mesto in občina Bekasi. Kot navajata Pribadi in Pauleit (2016), je bilo od osemdesetih let 20. stoletja v stanovanjske namene pozidanih skupno 200.000 ha (20 km²) zemljišč, pri čemer posamezno ograjeno naselje na metropolitanskem območju Džakarte zavzema približno 4,4 km² (Karwita, 2016). To pomeni, da od tedaj delež novozgrajenih ograjenih naselij v celotni stanovanjski gradnji na metropolitanskem območju Džakarte dosega 25 %.

Leisch (2002) ugotavlja, da je velik delež ograjenih naselij na navedenem metropolitanskem območju posledica čedalje večjega števila premožnih prebivalcev, ki zahtevajo varnost in zaščito svojega prestižnega življenjskega sloga, ter verskih in etničnih razlik. Raziskava, opravljena v indonezijskem mestu Surabaya (Ginting in Sakinah, 2018), pa je, nasprotno, pokazala, da namen ograjenih naselij ni segregacija, in sicer na podlagi socialno-ekonomskega položaja in rase, ampak predvsem zagotavljanje varnosti. Druge raziskave ograjenih naselij v Indoneziji se osredotočajo na njihov pojav v mestnem okolju (Dick in Rimmer, 1998; Leisch, 2002), njihovo tipologijo, uporabo nadzorne tehnologije za zagotavljanje varnosti (Hishiyama, 2010), lokacijo ograjenih naselij (Ahmadi, 2005; Febby, 2010), položaj na nepremičninskem trgu (Aris, 2003; Rudiawan, 2008) in preference ljudi, da živijo v teh naseljih (Nurhadi, 2004; Tambunan, 2009; Handoko, 2011; Sueca in Fitriani, 2012). Povezava med stanovanjskimi preferencami in stopnjo zadovoljstva prebivalcev ograjenih naselij pa je še vedno slabo raziskana.

V ograjenih naseljih je več različnih skupin hiš ali stanovanjskih kompleksov, ki ustvarjajo sosesko z ekonomsko mešano

sestavo prebivalstva, pri čemer mora biti v skladu s sprejetim zakonom o stanovanjih in naseljih št. 1/2011, vladno uredbo št. 14/2016 in odlokom ministrstva za javna stanovanja št. 10/2012, ki podpirajo cenovno uravnoteženo stanovanjsko oskrbo, razmerje med stanovanji za ljudi z nizkimi, srednjimi in visokimi dohodki 1 : 2 : 3. Navedena zakonodaja določa število stanovanj za ljudi z nizkimi, srednjimi in visokimi dohodki v vsakem stanovanjskem naselju. Njen namen je ustvariti ravnovesje med socialno-ekonomskimi sloji v posameznih stanovanjskih skupnostih in zaradi omejenih virov vladno odgovornost v programih zagotavljanja stanovanj za ljudi z nizkimi dohodki prenesti na zasebni sektor. Navedeni predpisi od zasebnega sektorja v Indoneziji zahtevajo, da gradi ograjena naselja, v katerih si lahko stanovanje privoščijo pripadniki različnih družbenih slojev. Ti predpisi pričakovanih rezultatov niso dosegli, saj se cene nepremičnin stalno višajo, kar zasebnemu sektorju otežuje gradnjo stanovanj za ljudi z nizkimi dohodki v tovrstnih ograjenih naseljih. Zaradi tega je vlada leta 2015 na podlagi odloka ministrstva za javna stanovanja št. 7/2013 zasebnemu sektorju dovolila, da za revnejše stanovalce gradi ločena ograjena naselja na obrobju mest, kjer so cene zemljišč še vedno dovolj ugodne za gradnjo cenovno dostopnih stanovanj za pripadnike nižjih slojev. Zaradi novega odloka se zdaj na metropolitanskem območju Džakarte množično širi cenovno neuravnotežena stanovanjska oskrba v okviru ograjenih naselij.

Po mnenju mnogih strokovnjakov navedeni predpis ovira pričakovano družbeno interakcijo med različnimi socialno-ekonomskimi sloji v družbi. Pri tem se postavlja vprašanje, ali v ograjenih soseskah z ekonomsko mešano sestavo prebivalstva sploh poteka družbena interakcija med sloji, in če ne, zakaj ne. Drugo zanimivo vprašanje pa je, kako se socialno-ekonomski sloji v tovrstnih naseljih sploh oblikujejo. Namen članka je potrditi pojav družbene interakcije med socialno-ekonomskimi sloji v ograjenih naseljih z ekonomsko mešano sestavo prebivalstva in ugotoviti, zakaj ta interakcije sploh poteka. Izsledki raziskave bi lahko pomagali izboljšati indonezijsko stanovanjsko politiko z vidika povezave med tovrstnimi ograjenimi naselji in družbeno interakcijo med socialno-ekonomskimi sloji.

2 Pregled literature

2.1 Negativne in pozitivne posledice ograjenih sosesk

Pojav ograjenih naselij v ZDA je bil posledica čedalje večjih težav zaradi rasnih nemirov, mestnega nasilja in družbenih neenakosti ter množične selitve belcev srednjega razreda v predmestja v osemdesetih letih 20. stoletja (Sandercock, 2003). Nekateri raziskovalci pa trdijo, da je bil vzpon neoliberaliz-

ma v navedenem obdobju (Leisch, 2002; Hackworth, 2007; Remali in Salama, 2016) razlog za hitro širjenje ograjenih naselij po vsem svetu, med drugim v Argentini (Thuillier, 2005), Čilu (Salcedo in Torres, 2004), Braziliji (Coy in Pohler, 2002), Savdski Arabiji (Glasze in Alkhayyal, 2002; Glasze idr., 2006), Gani (Asiedu in Arku, 2009), Južnoafriški republiki (Breetzke in Cohn, 2013), Bolgariji (Stoyanov in Frantz, 2006), Kanadi (Townshend, 2006), Angliji (Blandy, 2006), Indoneziji (Leisch, 2002), Vietnamu (Pow, 2009), Katarju (Rizzo, 2014; Zaina idr., 2016), Libanonu (Glasze in Alkhayyal, 2002), na Portugalskem (Raposo, 2006), na Novi Zelandiji (Dupuis in Thorns, 2008), v Avstraliji (Gleeson, 2006) ter celo v komunističnih državah, kot je Kitajska (Lee in Webster, 2006; Pow, 2007a, 2007b), in v postkomunističnih državah, kot so Estonija (Ruoppila in Kaehrik, 2003), Rusija (Blinnikov idr., 2006), Bolgarija (Hirt, 2012; Stoyanov in Frantz, 2006), Romunija (Negura, 2009), Srbija (Hirt in Petrović, 2011), Poljska (Mostowska, 2009), (Vzhodna) Nemčija in Madžarska (Bodnar in Molnar, 2010).

Obstoj ograjenih naselij kot oblike ekskluzivnih sosesk, kjer so stanovalci ločeni od drugih prebivalcev, so kritizirali številni raziskovalci (Low, 2003; Manzi in Smith-Bowers, 2005; Roitman, 2005). Obdajajoči zidovi take soseske preprečujejo povezavo in potrebo po interakciji njenih stanovalcev z nestanovalci (Burke in Sebaly, 2001), kar je v nasprotju z vladno politiko krepitev socialne kohezije na podlagi stalnega povezovanja med soseskami (Grant idr., 2004). Poleg tega ograjena naselja povečujejo družbeni prepad in nelagodje med državljani (Low, 2003; Sandercock, 2003), saj simbolizirajo neenakost med višjimi in nižjimi družbenimi razredi (Sanchez idr., 2005; Webster idr., 2006). Malezijske raziskave (Xavier, 2008; Lean in Smyth, 2012) kažejo, da strmo naraščanje vrednosti nepremičnin močno otežuje zagotavljanje cenovno dostopnih stanovanj v ograjenih naseljih. Kljub obljubam pa zidovi, varovani vhodi in videonadzor ograjenih naselij ne morejo zavarovati pred kriminalom. Izsledki raziskav, opravljenih v Južnoafriški republiki (Wilson-Doenges, 2000; Duca, 2015), Turčiji (Erkip, 2003) in Angliji (Atkinson in Blandy, 2005), kažejo, da ograjena naselja postanejo tarče kriminala, ob tem socialne kohezije, potrebne za njegovo preprečevanje, v teh naseljih ni. Zaradi negativnih posledic so se za ograjena naselja začeli uporabljati izrazi, kot so utrjene enklave (Caldeira, 2000), ekskluzivni ograjeni svetovi imunih skupnosti (Harvey, 1999), tiha in varna zavetja (Bauman, 2001), distopija izključenosti (Young, 1999), arhitektura strahu (Ellin, 1997) in celo arhitektura apartheida (Davis, 1998), ki ponazarjajo škodljive vplive tovrstnih naselij.

Kljub vsemu imajo ograjena naselja tudi pozitivne vplive. Med drugim omogočajo priložnost za izboljšanje kakovosti urbanističnega oblikovanja, infrastrukture in odprtih prostorov

(Grant idr., 2004). Hiše, drugi objekti in infrastruktura so oblikovani in zgrajeni ob upoštevanju pravil, ki zagotavljajo udobno bivanje v urejeni soseski. Javno infrastrukturo in storitve v teh naseljih upravlja in vzdržuje zasebna samoupravna organizacija (Glasze idr., 2006). V njih so vzpostavljena skupna pravila ali zasebno upravljanje (Blandy in Lister, 2005), ki je učinkovitejše od javnega (vladnega) upravljanja. Grant (2005) ugotavlja, da tovrstno zasebno upravljanje zmanjšuje pritisk na javno upravo glede zagotavljanja in vzdrževanja javne infrastrukture.

Čeprav družbene vezi in socialna kohezija niso glavni dejavniki, ki vplivajo na to, da se ljudje odločijo živeti v ograjenem naselju (Blandy in Lister, 2005), postanejo občutno pomembnejši potem, ko ljudje dejansko v njem živijo (Garip in Şener, 2012). Razlog za to je, da živijo v zaprti soseski (Edgü in Cimşit, 2011) v okviru razmeroma homogenega družbenega razreda (Xavier, 2008), v katerem je vsem pomemben občutek varnosti (Grant, 2005). Ograjena naselja so poleg tega zatočišča za vse, ki ne sledijo uveljavljenim družbenim pravilom in normam. V Savdski Arabiji na primer zagotavljajo svobodo tistim, ki se ne strinjajo s konservativno kulturo v državi (npr. ženskam in priseljencem; Odrowaz-Coates, 2015).

Ne glede na svoje negativne in pozitivne vplive ograjena naselja nastajajo zato, ker urbanistična politika in stanovanjska politika ne moreta zagotoviti varnega bivalnega okolja (Coy in Poehler, 2002; Glasze in Alkhayyal, 2002; Le Goix, 2005; Rosen in Razin, 2008). Na žalost veljajo za učinkovito obliko stanovanjske gradnje, ker so zasebni investitorji vključeni v sistem zagotavljanja javnih storitev (Foldvary, 1994). Kljub vsem težavam, ki jih povzročajo, mnoge vlade, med drugim tudi v ZDA (Blakely in Snyder, 1997; Low, 2003; McKenzie, 2006), niso naklonjene preprečevanju širjenja ograjenih naselij, saj ta prispevajo k davčnim dohodkom in zagotavljanju javne infrastrukture (Grant, 2005; Glasze idr., 2006).

3 Raziskovalna metoda

V skladu s cilji raziskave so se avtorji odločili za uporabo kvalitativnega pristopa in študije primera. Proučevano ograjeno naselje je v Cibuburju v indonezijski provinci Zahodna Java, ki je znan po dobri kakovosti sosesk in infrastrukture. Izbrano ograjeno naselje je veliko, saj pokriva približno 480 ha, dodatnih 270 ha pa je že določenih za prihodnjo gradnjo. Od leta 1997 je bilo v njem zgrajenih 48 stanovanjskih kompleksov za približno 8.700 stanovalcev in javna infrastruktura, kot so tržnica, šole, rekreacijske in športne površine, restavracije, verski objekti in prometna infrastruktura.

Zakonodaja, ki se uporablja, določa kategorije predvidenih stanovalcev v ograjenih soseskah z ekonomsko mešano sestavo prebivalstva na podlagi njihovih mesečnih prihodkov: stanovalci z manj kot 300 USD mesečnih dohodkov spadajo v nižji dohodkovni razred, stanovalci s (i) 300 – 600 USD oziroma (ii) 600 – 1.000 USD spadajo v srednji dohodkovni razred, tisti z več kot 1.000 USD dohodkov pa med premožne. Zasebni investitor je v skladu s predpisi za ograjene soseske z ekonomsko mešano sestavo prebivalstva zgradil različne vrste hiš. Posameznikom z nizkimi dohodki so tako namenjene hiše, velike 21 m², posameznikom v prvi skupini srednjega dohodkovnega razreda (300 – 600 USD) hiše, velike 36 m², posameznikom v drugi skupini srednjega dohodkovnega razreda (600 – 1.000 USD) hiše, velike od 45 do 60 m², premožni pa lahko kupijo največje hiše, ki v povprečju obsegajo od 120 do 250 m². Po navedbah upravnika naselja je bilo pred sprejetjem odloka ministrstva za javna stanovanja št. 10/2012 v proučevanem naselju zgrajenih 15 stanovanjskih kompleksov samo za srednji in visoki dohodkovni razred. Po sprejetju novega odloka leta 2012 sta bila samo dva kompleksa zgrajena v skladu z novimi zahtevami, dve leti pozneje, po sprejetju dopolnjene različice odloka, pa je bilo zgrajenih še preostalih 31 kompleksov, ki pa niso vključevali stanovanj za nizki dohodkovni razred. Avtorji so v raziskavo vključili stanovalce dveh stanovanjskih kompleksov z ekonomsko mešano sestavo prebivalstva, pri čemer sta bila kompleksa zgrajena v skladu z odlokom ministrstva za javna stanovanja št. 10/2012, da bi potrdili pojav družbene interakcije med družbenimi razredi v ograjenem naselju z ekonomsko mešano sestavo prebivalstva.

Da bi razumeli družbeno interakcijo med stanovalci z različnim socialno-ekonomskim položajem, so avtorji proučili razloge za izbiro stanovanja po posameznih dohodkovnih razredih. Analizirali so dejavnike, ki vplivajo na stanovanjske preference, in pomembnost varnostnih storitev in infrastrukture kot glavnih razlogov za to, da se ljudje odločijo živeti v ograjenem naselju z ekonomsko mešano sestavo prebivalstva. Poleg tega so proučili pogostost uporabe infrastrukture v naselju in pogostost družbene interakcije med stanovalci, da bi ugotovili, kako pogosto in kje poteka interakcija med stanovalci različnih socialno-ekonomskih slojev.

Ohranjanje zasebnosti in pomanjkanje zanimanja sta bili glavni oviri pri pridobivanju primarnih podatkov od stanovalcev ograjenega naselja z anketo od vrat do vrat, čeprav sta upravnik in vodja naselja izdala dovoljenje za izvedbo ankete v obeh stanovanjskih kompleksih. Kljub izdanemu dovoljenju je upravnik zahteval, da ob kateri koli objavi, povezani z anketo, vsi podatki ostanejo anonimni. Od 480 stanovalcev, ki živijo v proučevanih stanovanjskih kompleksih z ekonomsko meša-

Preglednica 1: Dejavniki, ki vplivajo na stanovanjske preference, glede na starost, spol in mesečni dohodek

Dejavnik	Splošno	Starost (v letih)		Spol		Mesečni dohodek (v USD)*			
		< 45	> 45	M	Ž	< 300	300–600	600–1.000	> 1.000
Varovanje	1,61	1,88	1,36	1,56	1,65	2,29	2,57	2,90	4,07
Kakovost in število javnih objektov in površin	1,75	1,95	1,53	1,63	1,85	1,57	2,36	1,80	2,53
Varnost	2,06	2,21	1,89	2,00	2,10	2,29	3,00	2,10	2,81
Naložbene priložnosti	2,39	2,37	2,42	2,44	2,35	2,00	2,36	2,10	2,79
Strateška lokacija	2,39	2,37	2,38	2,37	2,41	2,29	3,21	2,20	3,24
Oblika stanovanj	2,49	2,63	2,38	2,34	2,63	3,43	1,71	1,10	1,72
Socialna kohezija	2,61	2,86	2,33	2,76	2,48	2,29	2,57	1,60	1,93

Opomba: *1 USD = 15.000 RIP

Preglednica 2: Pomembnost različnih oblik varovanja glede na starost, spol in mesečni dohodek

Pomembnost različnih oblik varovanja	Splošno	Starost		Spol		Mesečni dohodek (v USD)*			
		< 45	45–65	M	Ž	< 300	300–600	600–1.000	> 1.000
Zavarovan vhod v kompleks	1,67	1,74	1,62	1,63	1,71	2,00	2,00	1,40	2,16
Redni varnostni obhodi	1,75	1,91	1,62	1,63	1,85	1,57	2,36	1,60	1,66
Zavarovan glavni vhod	1,91	2,00	1,84	1,76	2,04	2,29	3,64	2,20	3,02
Videonadzor v soseski	2,01	2,02	2,02	1,76	2,23	2,14	2,86	2,70	3,91
Ločevalni zid	2,08	2,00	2,18	1,95	2,19	2,14	1,71	1,50	2,76
Predpisi	2,19	2,33	2,09	2,00	2,35	2,00	2,14	1,50	2,62
Zavarovan dostop do prostorov	2,55	2,72	2,40	2,60	2,50	2,57	1,71	1,30	2,02

Opomba: *1 USD = 15.000 RIP

no sestavo prebivalstva v ograjenem naselju, jih je v anketi na podlagi vzorčenja po metodi snežne kepe sodelovalo samo 89.

Avtorji so vse štiri vidike raziskave proučevali z uporabo petstopenjske Likertove lestvice, ki je uveljavljeno analitično orodje pri vrednotenju stanovanj po vselitvi (Hassanain, 2008; Najib idr., 2011; Owolabi, 2015; Eshaghi in Khozaei, 2016). Uporabili so jo za analizo pomembnosti dejavnikov, ki vplivajo na stanovanjske preference, in pomembnosti raznih oblik varovanja v ograjenem naselju (1 = zelo pomembno, 5 = najmanj pomembno) ter pogostosti uporabe razpoložljive infrastrukture in družbene interakcije (1 = najpogostejše, 5 = najmanj pogosto). Anketo so spremljali polstrukturirani intervjuji, s katerimi so avtorji proučevali vzrok povezav med prvimi tremi vidiki in razloge za družbeno interakcijo med stanovalci v stanovanjskih kompleksih z ekonomsko mešano sestavo prebivalstva.

4 Izsledki in razprava

4.1 Pomembnost dejavnikov, ki vplivajo na stanovanjske preference

Kot je razvidno iz preglednice 1, je bilo med 89 anketiranci glavni razlog za nakup in prebivanje v ograjenem naselju

varovanje (1,61), sledili so kakovost in število javnih objektov in površin (1,75), značilnosti soseske (2,06), naložbene priložnosti (2,39), strateška lokacija (2,39), oblika hiš (2,49) in socialna kohezija (2,61). Za anketirance je bil pomemben dejavnik tudi strah pred kriminalom, saj se v Džakarti povečuje delež kaznivih dejanj v stanovanjskih soseskah (npr. kraje imetja in ugrabitve otrok). Pomembna je bila tudi razpoložljivost infrastrukture, saj v mestu primanjkuje kakovostnih javnih objektov in površin ali je teh zelo malo. Zaradi slabo zgrajene infrastrukture in brezbriznih voznikov soseske niso varne, zlasti za starejše in otroke, zaradi česar ljudje najraje izberejo stanovanje v stanovanjskem kompleksu z ekonomsko mešano sestavo prebivalstva v ograjenem naselju. Zaradi varnosti, infrastrukture in strateške lokacije so stanovanja v ograjenih naseljih postala obetavna naložbena priložnost, ne glede na obliko ponujenega stanovanja. Socialna kohezija je med stanovalci ograjenega naselja na zadnjem mestu, čeprav še vedno velja za dokaj pomemben dejavnik.

Najpomembnejša dejavnika, ki vplivata na izbiro stanovanja, sta varovanje in razpoložljiva infrastruktura (Blakely in Snyder, 1997). Odgovori anketirancev, mlajših od 45 let, se ujemajo s splošnimi rezultati ankete (v stolpcu Splošno), pri anketirancih, starejših od 45 let, pa so opazne nekatere razlike. Zanje socialna kohezija ni najmanj pomemben dejavnik, saj je

Preglednica 3: Pogostost uporabe infrastrukture v ograjenem naselju

		Infrastruktura v ograjenem naselju								
		Kitajska vas	Šport	Restavracije	Tržnica	Park	Verski objekti	Šola	Banka	Avto-bus
Uporaba za lastne potrebe	Pogostost	4,48	3,40	2,39	1,57	3,65	1,89	2,58	2,25	3,58
	Korelacija	0,03	(0,04)	0,26	0,19	0,11	0,13	(0,09)	0,11	0,16
Interakcija z drugimi	Pogostost	4,84	3,79	2,84	2,01	3,69	2,02	2,96	2,84	3,89
	Korelacija	(0,02)	(0,05)	0,20	0,16	0,09	0,17	0,01	0,19	0,15

pomembnejša od oblike stanovanj, strateške lokacije in naloženih priložnosti. To kaže, da je socialna kohezija v ograjenem naselju še vedno pomembna potreba, ki jo je treba zadovoljiti, kar zagovarjajo tudi nekateri drugi raziskovalci (Edgü in Cimsit, 2011; Garip in Şener, 2012).

4.2 Pomembnost varovanja

Kot je razvidno iz preglednice 2, je za anketirance najpomembnejša oblika varovanja zavarovan vhod v stanovanjski kompleks (1,67). Sledijo redni varnostni obhodi (1,75), zavarovan glavni vhod v naselje (1,91), videonadzor v soseski (2,01), zid, ki kompleks ločuje od preostale soseske (2,08), predpisi v soseski (2,19) in zavarovan dostop do površin in prostorov, namenjenih stanovalcem kompleksa (2,55).

Čeprav so izsledki podobni glede na starost in spol, se pomembne razlike pojavljajo med skupinami z različnimi mesečnimi dohodki. Za stanovalce z mesečnim dohodkom do 300 USD so najpomembnejši redni varnostni obhodi, in ne zavarovan vhod v stanovanjski kompleks, saj povzročajo težave sorodnikom, ki živijo drugje in prihajajo v ograjeno naselje na obisk. Poleg tega so jim predpisi, ki stanovalce ozaveščajo o varnosti in varovanju v kompleksu, pomembnejši od zavarovanega glavnega vhoda in videonadzora. Prvi ovira obiske sorodnikov, drugi pa povečuje mesečne stroške vzdrževanja. V nasprotju z njimi je za stanovalce z višjimi dohodki (300 – 600 USD in 600 – 1.000 USD) najpomembnejši zavarovan dostop do prostorov in površin, namenjenih izključno stanovalcem kompleksa. Drugi varnostni ukrepi so jim manj pomembni, saj si jih morajo deliti z ljudmi, ki ne živijo v istem stanovanjskem kompleksu in za katere se komaj zmenijo.

Navedene ugotovitve potrjujejo, da je pomembnost različnih oblik varovanja odvisna od njihove zmožnosti preprečevanja kriminala. Dodatna tehnologija, kot je videonadzor, je za večino anketirancev najmanj pomembna, saj povečuje njihove mesečne stroške, hkrati pa kriminala neposredno ne preprečuje.

4.3 Pogostost uporabe infrastrukture v ograjenem naselju

Iz preglednice 3 je razvidno, da se v naselju najpogosteje uporabljajo tržnica (1,57), verski objekti (1,88), banka (2,25),

restavracije (2,39) in šola (2,58). Anketiranci pa najredkeje uporabljajo športne objekte (3,40), avtobus (3,58), park (3,65) in rekreacijsko območje Kitajska vas (4,48). Čeprav je razpoložljivost infrastrukture med najpomembnejšimi dejavniki za življenje v ograjenem naselju, je njena korelacija s pogostostjo uporabe zanemarljiva. To pomeni, da je razpoložljiva infrastruktura med glavnimi privlačnimi prvinami stanovanjskega kompleksa z ekonomsko mešano sestavo prebivalstva, vendar jo stanovalci kompleksa redko uporabljajo za zadovoljevanje lastnih potreb.

Po mnenju anketirancev razpoložljiva športna infrastruktura ne ustreza potrebam stanovalcev. Uporaba nekaterih športnih objektov je predraga, zato jih večina ne uporablja. Športni objekti, kot sta fitnes in igrišče za golf, večine anketirancev ne zanimajo. Bolj so naklonjeni uporabi cenovno ugodnih skupnih objektov, kot sta bazen in športno igrišče. Nenaklonjenost uporabi poleg tega povečujejo številni obiskovalci od drugod, ki uporabljajo to infrastrukturo, zlasti ob koncu tedna. Dolge vrste pred napravami ter hrup in gneča v fitnesu ustvarjajo neprijetno ozračje za stanovalce. Podobno je z avtobusom, ki ga večinoma uporabljajo nestanovalci, da pridejo na obisk k sorodnikom ali pripotujejo v naselje, ker želijo uporabljati športne objekte in površine.

Čeprav so parki v ograjenem naselju prostorni in umetniško oblikovani in so stanovalcem vizualno všeč, jih neradi uporabljajo za piknike ob koncu tedna. Podobno ne želijo uporabljati drugih zunanjih objektov. Zaradi neprijetnega vlažnega tropskega podnebja se raje zadržujejo notri. Čeprav je rekreacijsko območje Kitajska vas primerno za ogled, privlači več obiskovalcev od drugod kot stanovalcev. Za stanovalce je to najmanj potreben objekt in ga uporabljajo samo za to, da tja peljejo sorodnike, ki pridejo na obisk (zlasti otroke). Ugotovitve kažejo neskladje med najpomembnejšimi dejavniki, ki vplivajo na stanovanjske preference, in pogostostjo uporabe razpoložljive infrastrukture. Infrastruktura je med glavnimi dejavniki, ki so vplivali na to, da so se anketiranci odločili živeti v ograjenem naselju (tako za varovanjem), hkrati pa jo le redko uporabljajo. To je posledica različnih potreb in pomanjkanja ekskluzivnosti. Ker imajo do te infrastrukture dostop tudi nestanovalci, je izgubil občutek varnega, privilegirane in prestižnega življenjskega sloga (Blakely in Snyder, 1997; Erkip, 2003).

Preglednica 4: Pogostost družbene interakcije med stanovalci ograjenega naselja

Pogostost interakcije	Splošno	Starost		Spol		Mesečni dohodek (v USD)*			
		< 45	45–65	M	Ž	< 300	300–600	600–1.000	> 1.000
Z ljudmi, ki ne živijo v istem kompleksu	1,97	2,05	1,84	2,02	1,92	1,57	1,57	1,00	1,64
S stanovalci istega kompleksa	2,72	2,81	2,60	2,83	2,63	2,29	3,29	2,00	2,71
Z ljudmi, ki ne živijo v ograjenem naselju	3,61	3,67	3,56	3,66	3,56	3,86	2,50	1,60	2,72

Opomba: *1 USD = 15.000 RIP

4.4 Pogostost družbene interakcije med stanovalci ograjenega naselja

Kot kaže preglednica 4, se anketiranci najpogosteje družijo z ljudmi, ki ne živijo v istem stanovanjskem kompleksu (1,97), nato pa s stanovalci istega kompleksa (2,72), ljudmi, ki ne živijo v ograjenem naselju (3,61), in stanovalci ograjenega naselja (3,74). To kaže, da interakcija poteka na mestih, kot so tržnica ali športni objekti, kjer se anketiranci srečujejo z drugimi stanovalci naselja. V neposredni soseski stanovanjskega kompleksa interakcija poteka ob posebnih dogodkih, kot so proslave ob dnevu neodvisnosti, splošne volitve, poroka ali pogreb sosedu. Anketiranci se najmanj družijo z ljudmi, ki ne živijo v istem naselju, a uporabljajo tamkajšnje tržnico ali športne objekte.

Rezultati so podobni pri vseh anketirancih, ne glede na starost, spol in mesečni dohodek. Izjema sta samo skupini z mesečnim dohodkom med 300 in 600 USD in 600 in 1.000 USD, ki se pogosteje družita z ljudmi, ki ne živijo v ograjenem naselju, kot pa s stanovalci istega kompleksa. Druženje poteka v prostorih in na površinah, ki jih uporabljajo tudi ljudje, ki ne živijo v ograjenem naselju, kar zmanjšuje možnost kaznivih dejanj v naselju. Po mnenju anketirancev tovrstno druženje ustvarja družbene vezi med stanovalci in nestanovalci ograjenega naselja, kar preprečuje pojav kaznivih dejanj v naselju.

Navedene ugotovitve se ne ujemajo z izsledki prejšnjih raziskav, ki kažejo, da je največja želja vseh stanovalcev ograjenih naselij segregacija ali ločenost od preostalih prebivalcev (Burke in Sebaly, 2001; Low, 2003; Manzi in Smith-Bowers, 2005; Roitman, 2005). S sprejetjem odloka ministrstva za javna stanovanja št. 10/2012 se je uspešno zmanjšal negativni vpliv segregacije v proučevanem ograjenem naselju, ne pa tudi v posameznih stanovanjskih kompleksih. Proučevano ograjeno naselje je delno prepustno in dostopno tudi za nestanovalce.

V posameznih stanovanjskih kompleksih se stanovalci redko družijo med sabo, razen če so iz iste družine ali družbene skupine. Interakcijo med različnimi socialno-ekonomskimi sloji zavirajo razni dejavniki, na primer pomanjkanje skupnih tem

za pogovor in občutek večvrednosti. Stanovalci se raje družijo s pripadniki istega socialno-ekonomskega sloja v okoliških stanovanjskih kompleksih kot pa s pripadniki drugih družbenih razredov v svojem kompleksu. Navedeno se delno ujema z ugotovitvami drugih raziskovalcev (Edgü in Cimşit, 2011; Garip in Şener, 2012), ki optimistično trdijo, da se v ograjenih naseljih z ekonomsko mešano sestavo prebivalstva družbena interakcija in kohezija krepi. Po drugi strani je opazen vzorec interakcije s pripadniki istega družbenega sloja v drugih stanovanjskih kompleksih. V primerjavi z razmeroma homogenim družbenim razredom se v stanovanjskih kompleksih z ekonomsko mešano sestavo prebivalstva ne morejo razviti skupni interesi (Xavier, 2008). To kaže, da odlok ministrstva za javna stanovanja št. 10/2012 ni učinkovita rešitev za spodbujanje družbene interakcije v ograjenih naseljih z ekonomsko mešano sestavo prebivalstva.

5 Sklep

Da bi indonezijska vlada pomembno zmanjšala segregacijo, je začela spodbujati gradnjo stanovanjskih naselij z ekonomsko mešano sestavo prebivalstva na podlagi odloka ministrstva za javna stanovanja št. 10/2012, ki podpira cenovno uravnoteženo stanovanjsko oskrbo. Cilj odloka je spodbuditi družbeno interakcijo med stanovalci različnih socialno-ekonomskih slojev in z različnimi mesečnimi dohodki. Hkrati zmanjšuje ekskluzivnost ograjenih naselij z vidika uporabe infrastrukture in homogenosti družbenih razredov. Raziskava, predstavljena v tem članku, kaže, da so ograjena naselja z ekonomsko mešano sestavo prebivalstva neučinkovita pri spodbujanju družbene interakcije med stanovalci različnih socialno-ekonomskih slojev.

Varovanje je glavni razlog za to, da se ljudje odločijo živeti v ograjenem naselju. V tovrstnem naselju prebivajo predvsem zaradi slabe varnostne in druge infrastrukture, ki jo zagotavlja vlada. Poleg tega se želijo izogniti nesrečam ali kriminalu, saj vlada ni zmožna zavarovati njihovih družin. V raziskavi pa se je pokazalo tudi neskladje med pomembnostjo dejavnikov, ki vplivajo na stanovanjske preference, in pogostostjo uporabe razpoložljive infrastrukture. Infrastruktura je bila namreč med

anketiranci najpomembnejši dejavnik, ki je vplival na njihove stanovanjske preference in odločitve, da živijo v ograjenem naselju, hkrati pa jo zelo redko uporabljajo. Navedeno je posledica različnih potreb in pomanjkanja ekskluzivnosti. Infrastruktura v ograjenem naselju torej ne spodbuja družbene interakcije med stanovalci različnih socialno-ekonomskih slojev.

Tudi družbena interakcija med stanovalci v istem stanovanjskem kompleksu je šibka. Različni socialno-ekonomski sloji imajo različne skupne interese, kar zavira interakcijo. Interakcija pa je opazna s pripadniki istega družbenega razreda v drugih stanovanjskih kompleksih. Navedeno dokazuje, da ograjena naselja z ekonomsko mešano sestavo prebivalstva niso učinkovita pri spodbujanju družbene interakcije med stanovalci različnih socialno-ekonomskih slojev. Za spodbujanje socialne kohezije pripadnikov različnih socialno-ekonomskih slojev v tovrstnih naseljih so zato potrebne naprednejše raziskave. Treba bi bilo dodatno proučiti prostorske vzorce družbene interakcije ter oblikovanje kakovostnih stanovanj in sosesk, na podlagi česar bi se lahko v prihodnje zmanjšale negativne posledice ograjenih naselij. Tudi izsledki raziskave, predstavljene v tem članku, so lahko uporabni za izboljšanje stanovanjske politike in ustvarjanje boljših stanovanj in sosesk z ekonomsko mešano sestavo prebivalstva v prihodnje.

Zahvala

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Viri in literatura

Ahmadi, A. (2005): *Faktor-faktor yang mempengaruhi perkembangan fisik area pinggiran kota berdasarkan aspek persepsi bermukim pada kota Sengkang Provinsi Sulawesi Selatan*. Semarang, Diponegoro University.

Aris, R. (2003): *Perilaku pengembang kecil dalam keputusan investasi di Bandung Raya*. Magistrsko delo. Bandung, Bandung Institute of Technology.

Asiedu, A. B., in Arku, G. (2009): The rise of gated housing estates in Ghana: Empirical insights from three communities in Metropolitan Accra. *Journal of Housing and the Built Environment*, 24(3), str. 227–247. DOI: 10.1007/s10901-009-9146-0

Atkinson, R., in Blandy, S. (2005): Introduction: International perspective on the new enclavism and the rise of gated communities. *Housing Studies*, 20(2), str. 177–186. DOI: 10.1080/0267303042000331718

Atkinson, R., in Flint, J. (2004): Fortress UK? Gated communities, the spatial revolts of the elites and time-space trajectories of segregation. *Housing Studies*, 19(6), str. 875–892. DOI: 10.1080/0267303042000293982

Bauman, Z. (2001): *Community. Seeking safety in an insecure world*. Oxford, Polity.

Bekleyen, A., in Dalkılıç, N. (2011): The influence of climate and privacy on indigenous courtyard houses in Diyarbakır, Turkey. *Scientific Research and Essays*, 6(4), str. 908–922. DOI: 10.5897/SRE10.958

Blakely, E. J., in Snyder, G. M. (1997): *Fortress America: Gated communities in the United States*. Washington, DC, Brookings Institution Press. DOI: 10.1177/000169939804100209

Blandy, S. (2006): Gated communities in England: Historical perspectives and current developments. *GeoJournal*, 66(1-2), str. 15–26. DOI: 10.1007/s10708-006-9013-4

Blandy, S., in Lister, D. (2005): Gated communities: (Ne)gating community development? *Housing Studies*, 20(2), str. 287–301. DOI: 10.1080/0267303042000331781

Blinnikov, M., Shanin, A., Sobolev, N., in Volkova, L. (2006): Gated communities of the Moscow green belt: Newly segregated landscapes and the suburban Russian environment. *GeoJournal*, 66, str. 65–81. DOI: 10.1007/s10708-006-9017-0

Bodnar, J., in Molnar, V. (2010) Reconfiguring private and public: State, capital and new housing developments in Berlin and Budapest. *Urban Studies*, 47(4), str. 789–812. DOI: 10.1177/0042098009351188

Breetzke, G. D., in Cohn, E. G. (2013): Burglary in gated communities: An empirical analysis using routine activities theory. *International Criminal Justice Review*, 23(1), str. 56–74. DOI: 10.1177/1057567713476887

Burke, M., in Sebaly, C. (2001): Locking in the pedestrian? The privatised streets of gated communities. *World Transport Policy and Practice*, 7(4), str. 67–74.

Caldeira, T. P. R. (1996): Building up walls: The new pattern of spatial segregation in Sao Paulo. *International Social Science Journal*, 48(1), str. 55–66. DOI: 10.1111/j.1468-2451.1996.tb00056.x

Caldeira, T. P. R. (2000): *City of walls: Crime, segregation, and citizenship in Sao Paulo*. Berkeley, University of California Press.

Coy, M., in Pohler, M. (2002): Gated communities in Latin American megacities: Case studies in Brazil and Argentina. *Environment and Planning B: Planning and Design*, 29(3), str. 355–370. DOI: 10.1068/b2772x

Davis, M. (1998): *Ecology of fear: Los Angeles and the imagination of disaster*. New York, H. Holt.

Dick, H. W., in Rimmer, P. J. (1998): Beyond the third world city: The new urban geography of South East Asia. *Urban Studies*, 35(12), str. 2303–2321. DOI: 10.1080/0042098983890

Duca, F. (2015): Gating in Johannesburg: Digging inside the social and political system of a golf estate and suburban suburb. V: Bagaeen, S., in Uduku, O. (ur.): *Beyond gated communities: Urban gating and soft boundaries*, str. 49–64. Oxon, UK, Routledge. DOI: 10.4324/9781315765976-4

Dupuis, A., in Thorns, D. (2008): Gated communities as exemplars of "forting up" practices in a risk society. *Urban Policy and Research*, 26(2), str. 145–157. DOI: 10.1080/0811140802026800

- Edgü, E., in Cimşit, F. (2011): Island living as a gated community: Place attachment in an isolated environment. *AJZ ITU Journal of the Faculty of Architecture*, 8(2), str. 156–177.
- Ellin, N. (1997): *Architecture of fear*. New York, Princeton Architectural Press.
- Erkip, F. (2003): The shopping mall as an emergent public space in Turkey. *Environment and Planning A*, 35(6), str. 1073–1093. DOI: 10.1068/a35167
- Eshaghi, A., Khozaei, F. (2015) Learning from architects' mistakes, a case study of three female students residence halls. *Specialty Journal of Architecture and Construction*, 1(3), str. 17–21.
- Febby, A. (2010): Preferensi penghuni perumahan di kota Pekanbaru dalam menentukan lokasi perumahan. *Jurnal Ekonomi Pembangunan*, 12(1), str. 77–91. DOI: 10.23917/jep.v12i1.207
- Firman, T. (2004): New town development in Jakarta metropolitan region: A perspective of spatial segregation. *Habitat International*, 28(3), str. 349–368. DOI: 10.1016/S0197-3975(03)00037-7
- Foldvary, F. (1994): *Public goods and private communities: The market provision of social services*. Aldershot, VB, Edward Elgar.
- Garip, S. B., in Sener, H. (2012) Analysing environmental satisfaction in gated housing settlements: A case study in Istanbul. *AJZ ITU Journal of the Faculty of Architecture*, 9(1), str. 120–131.
- Ginting, S. W., in Sakinah, R. (2018): Gated community in Indonesian peri-urban: Security or segregation? *IOP Conf. Series: Earth and Environmental Science*, 202(1), str. 1–10. DOI: 10.1088/1755-1315/202/1/012057
- Glasze, G., in Alkhayyal, A. (2002): Gated housing estates in the Arab world: Case studies in Lebanon and Riyadh, Saudi Arabia. *Environment and Planning B: Planning and Design*, 29(3), str. 321–336. DOI: 10.1068/b12825t
- Glasze, G., Webster, C., in Frantz, K. (2006): *Private cities: Global and local perspectives*. London, Routledge.
- Gleeson, B. (2006): *Australia's heartlands: Making space for hope in the suburbs*. Crows Nest, NSW, Allen & Unwin.
- Gooblar, A. (2002): Outside the walls: Urban gated communities and their regulation within the British planning system. *European Planning Studies*, 10(3), str. 321–334. DOI: 10.1080/09654310220121068
- Grant, J. (2005): Planning responses to gated communities in Canada. *Housing Studies*, 20(2), str. 273–285. DOI: 10.1080/026730303042000331772
- Grant, J., Greene, K., in Maxwell, K. (2004): The planning and policy implications of gated communities. *Canadian Journal of Urban Research*, 13(1), str. 70–88. Dostopno na: <http://www.jstor.org/stable/44321057> (sneto 20. 2. 2019).
- Grant, J., in Mittelsteadt, L. (2004): Types of gated communities. *Environment and Planning B: Planning and Design*, 31(6), str. 913–930. DOI: 10.1068/b3165
- Hackworth, J. (2007): *The neoliberal city: Governance, ideology, and development in American urbanism*. Ithaca, NY, Cornell University Press. DOI: 10.7591/9780801461590
- Handoko, J. P. S. (2011): *Pertumbuhan permukiman gated community di Yogyakarta: Perumahan-perumahan di Kabupaten Sleman Yogyakarta*. Yogyakarta: Proceeding Seminar Nasional SCAN#2 Lifestyle and Architecture. DOI: 10.13057/psnmbi/m010419
- Harvey, D. (1999): *Justice, nature & the geography of difference*. Oxford, Blackwell.
- Hassanain, M. A. (2008) On the performance of evaluation on sustainable student housing facilities, *Journal of Facilities Management*, 6(3), str. 212–225. DOI: 10.1108/14725960810885989
- Hirt, S. A. (2012): *Iron curtains. Gates, suburbs and privatization of space in the post-socialist city*. Chichester, UK, Wiley-Blackwell. DOI: 10.1002/9781118295922
- Hirt, S. A., in Petrović, M. (2011): The Belgrade wall: The proliferation of gated housing in the Serbian capital after socialism. *International Journal of Urban and Regional Research*, 35(4), str. 753–777. DOI: 10.1111/j.1468-2427.2011.01056.x
- Hishiyama, K. (2010): Uneasy society in Indonesia: With special attention to the gated community and CCTV in Bali, *Procedia Social and Behavioral Sciences*, 2(1), str. 14–23. DOI: 10.1016/j.sbspro.2010.01.006
- Kartiwa, A. (2016): *Jaringan pengembang perumahan skala besar di Jabodetabek*. Magistrsko delo. Bandung, Bandung Institute of Technology.
- King, A. D. (2004): *Spaces of global cultures: Architecture urbanism identity*. New York, Routledge.
- Kuppinger, P. (2008): Exclusive greenery: New gated communities in Cairo. *City & Society*, 16(2), str. 35–61. DOI: 10.1525/city.2004.16.2.35
- Landman, K., in Schonteich, M. (2002): Urban fortresses. Gated communities as a reaction to crime. *African Security Review*, 11(4), str. 71–85. DOI: 10.1080/10246029.2002.9628147
- Le Goix, R. (2005): Gated communities: Sprawl and social segregation in southern California. *Housing Studies*, 20(2), str. 323–344. DOI: 10.1080/026730303042000331808
- Leaf, M. (1993): Land rights for residential development in Jakarta, Indonesia: The colonial roots of contemporary urban dualism. *International Journal of Urban and Regional Research*, 17(4), str. 477–491. DOI: 0.1111/j.1468-2427.1993.tb00236.x
- Leaf, M. (1994): The suburbanization of Jakarta: A concurrence of economics and ideology. *Third World Planning Review*, 16(4), str. 341–356. DOI: 10.3828/twpr.16.4.n51557k1532xp842
- Lean, H. H., in Smyth, R. (2013) Regional house prices and the ripple effect in Malaysia. *Urban Studies*, 50(5), str. 895–922. DOI: 10.1177/0042098012459582
- Lee, S., in Webster, C. (2006): Enclosure of the urban commons. *GeoJournal*, 66(1/2), str. 27–42. DOI: 10.1007/s10708-006-9014-3
- Leisch, H. (2002): Gated communities in Indonesia. *Cities*, 19(5), str. 341–350. DOI: 10.1016/S0264-2751(02)00042-2
- Libertun de Duren, N. R. (2006): Planning a la carte: The location patterns of gated communities around Buenos Aires in a decentralized planning context. *International Journal of Urban and Regional Research*, 30(2), str. 308–327. DOI: 10.1111/j.1468-2427.2006.00667.x
- Low, S. (2003): *Behind the gates: Life, security and the pursuit of happiness in fortress America*. New York, Routledge. DOI: 10.4067/s0250-71612003008700008
- Low, S. M. (2001): The edge and the center: Gated communities and the discourse of urban fear. *American Anthropologist*, 103(1), str. 45–58. DOI: 10.1525/aa.2001.103.1.45
- Manzi, T., in Smith-Bowers, B. (2005): Gated communities as club goods: Segregation or social cohesion? *Housing Studies*, 20(2), str. 345–359. DOI: 10.1080/0267303042000331817
- McKenzie, E. (2003): Common-interest housing in the communities of tomorrow. *Housing Policy Debate*, 14(1 in 2), str. 203–234. DOI: 10.1080/10511482.2003.9521473
- McKenzie, E. (2006): *The dynamics of privatopia: Private residential governance in the USA*. V: Glasze, G., Webster, C., in Frantz, K. (ur.): *Private cities: Global and local perspectives*, str. 9–30. London, Routledge.

- Mostowska, M. (2009): Provision of private services and enforcing neighbours' behaviour in one of Warsaw's gated neighborhoods. V: Smigiel, C. (ur.): *Gated and guarded housing in Eastern Europe*, str. 69–74. Leipzig, Leibniz-Institut für Länderkunde.
- Najib, N. U. M., Yusof, N. A., in Abidin, N. Z. (2011) Student residential satisfaction in research universities. *Journal of Facilities Management* 9(3), str. 200–212. DOI: 10.1108/14725961111148108
- Negura, O. (2009): Residential ensembles in "hypermodern times". A case study of their aspirations in Bucharest. V: Smigiel, C. (ur.): *Gated and guarded housing in Eastern Europe*, str. 59–68. Leipzig, Leibniz-Institut für Länderkunde.
- Nurhadi, I. (2004) *Preferensi masyarakat dalam memilih perumahan perkotaan di kota Tangerang studi kasus: Perumahan Banjar Wijaya, Poris Indah, dan Perumnas IV*. Magistrsko delo. Semarang, Universitas Diponegoro. DOI: 10.31848/arcade.v1i2.16
- Odwowaz-Coates, A. (2015): A gated community as a "soft" and gendered total institution. *International Sociology*, 30(3), str. 233–249. DOI: 10.1177/0268580915578759
- Owolabi, B.O. (2015). The effects of students' housing on academic performance at the University of Ibadan in Nigerian. *International Journal of Scientific & Engineering Research*, 6(3), str. 1118–1132.
- Parker, S. (2006): *Theory of urban experience*. Bologna, Il Mulino.
- Pow, C.-P. (2007a): Securing the "civilised" enclaves: Gated communities and the moral geographies of exclusion in (post)-socialist Shanghai. *Urban Studies*, 44(8), str. 1539–1558. DOI: 10.1080/00420980701373503
- Pow, C.-P. (2007b): Constructing a new private order: Gated communities and the privatization of urban life in post-reform Shanghai. *Social and Cultural Geography*, 8(6), str. 813–833. DOI: 10.1080/14649360701712511
- Pow C.-P. (2009): Public intervention, private aspiration: Gated communities and the condominiumisation of housing landscapes in Singapore. *Asia Pacific Viewpoint*, 50(2), str. 215–227. DOI: 10.1111/j.1467-8373.2009.01394.x
- Pribadi, D. O., in Pauleit, S. (2016) Peri-urban agriculture in Jabodetabek Metropolitan Area and its relationship with the urban socioeconomic system. *Land Use Policy*, 55, str. 256–274. DOI: 10.1016/j.landusepol.2016.04.008
- Quintal, D. (2006): *Gated communities in Sydney: A search for security*. Diplomsko delo. New South Wales, University of New South Wales.
- Raposo, R. (2006): Gated communities, commodification and aestheticization: The case of the Lisbon metropolitan area. *GeoJournal*, 66(1-2), str. 43–56. DOI: 10.1007/s10708-006-9015-2
- Remali, A. M., in Salama, A. M. (2016): A chronological exploration of the evolution of housing typologies in Gulf cities. *City Territory and Architecture*, 3(14), str. 1–15. DOI: 10.1186/s40410-016-0043-z
- Rizzo, A. (2014): Rapid urban development and national master planning in Arab Gulf countries. Qatar as a case study. *Cities*, 39, str. 50–57. DOI: 10.1016/j.cities.2014.02.005
- Roitman, S. (2005): Who segregates whom? The analysis of a gated community in Mendoza, Argentina. *Housing Studies*, 20(2), str. 303–321. DOI: 10.1080/0267303042000331790
- Rosen, G., in Razin, E. (2008): The rise of gated communities in Israel: Reflections on changing urban governance in a neo-liberal era. *Urban Studies*, 46(8), str. 1702–1722. DOI: 10.1177/0042098009105508
- Rudiawan, R. (2008): *Kajian pengembangan wilayah dan implikasinya terhadap bisnis dan investasi properti di Kabupaten Bandung Barat*. Bandung, Bandung Institute of Technology.
- Ruoppila, S., in Kaehrik, A. (2003): Socio-economic residential differentiation in post-socialist Tallinn. *Journal of Housing and the Built Environment*, 18(1), str. 49–73. DOI: 10.1023/A:1022435000258
- Salcedo, R., in Torres, A. (2004): Gated communities in Santiago: Wall or frontier. *International Journal of Urban and Regional Research*, 28(1), str. 27–44. DOI: 10.1111/j.0309-1317.2004.00501.x
- Sanchez, T. W., Lang, R. E., in Dhavale, D. M. (2005): Security versus status? A first look at the census's gated community data. *Journal of Planning Education and Research*, 24(3), str. 281–291. DOI: 10.1177/0739456X04270127
- Sandercock, L. (2003): *Cosmopolis II: Mongrel cities of the 21st Century*. London, Continuum.
- Stoyanov, P., in Frantz, K. (2006): Gated communities in Bulgaria: Interpreting a new trend in post-communist urban development. *GeoJournal*, 66(1-2), str. 57–63. DOI: 10.1007/s10708-006-9016-1
- Sueca, N. P., in Fitriani, L. R. D. (2012): Profile gated community di Denpasar. *Prosiding Temu Ilmiah IPLBI*, str. 45–48. Bandung, Bandung Institute of Technology.
- Tambunan, D. B. (2009): Atribut yang menjadi pertimbangan konsumen dalam membeli produk perumahan: Penelitian dan analisis conjoint. *Jurnal Manajemen Bisnis*, 2(2), str. 141–153.
- Thuillier, G. (2005): Gated communities in the metropolitan area of Buenos Aires, Argentina: A challenge for town planning. *Housing Studies*, 20(2), str. 255–271. DOI: 10.1080/0267303042000331763
- Townshend, I. J. (2006): From public neighborhoods to multi-tier private neighborhoods: The evolving ecology of neighbourhood privatization in Calgary. *GeoJournal*, 66, str. 103–120. DOI: 10.1007/s10708-006-9010-7
- Webster, C, Wu, F., in Zhao, Y. (2006): *China's modern gated cities*. V: Glasze, G., Webster, C. in Frantz, K. (ur.): *Private communities: Global and local perspectives*, str. 153–169. Oxford, Routledge.
- Wilson-Doenges, G. (2000): An exploration of sense of community and fear of crime in gated communities. *Environment and Behavior*, 32(5), str. 597–611. DOI: 10.1177/00139160021972694
- Winarso, H. (2005): City for the rich. V: *Cities of People: Papers of the 8th International Conference of the Asian Planning Schools Association Held on 11–14 September 2005 in Penang*, str. 11–14. Penang, International Conference of the Asian Planning Schools Association.
- Winarso, H., Hudalah, D., in Firman, T. (2015): Peri-urban transformation in the Jakarta metropolitan area. *Habitat International*, 49, str. 221–229. DOI: 10.1016/j.habitatint.2015.05.024
- Wu, F. (2005): Rediscovering the "gate" under market transition: From work-unit compounds to commodity housing enclaves. *Housing Studies*, 20(2), str. 235–254. DOI: 10.1080/0267303042000331754
- Wu, F., in Webber, K. (2004): The rise of "foreign gated communities" in Beijing: Between economic globalization and local institutions. *Cities*, 21(3), str. 203–213. DOI: 10.1016/j.cities.2004.03.002
- Xavier, G. (2008): *Gated and guarded communities-security concerns for elitist practice?* Prispjev je bil predstavljen na konferenci z naslovom 5th Asian Law Institute Conference, ki je potekala od 22. do 23. maja v Singapurju. Tipkopis.
- Young, J. (1999) *The exclusive society: Social exclusion, crime and difference in late modernity*. London, Sage.
- Zaina, Samar, Zaina, Sara, in Furlan, R. (2016): Urban planning in Qatar: Strategies and vision for the development of transit villages in Doha. *Australian Planner*, 53(4), str. 286–301. DOI: 10.1080/07293682.2016.1259245

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Gordana KAPLAN

Presoja vloge zelenih in pozidanih površin pri zmanjševanju učinkov površinskega mestnega toplotnega otoka na podlagi podatkov daljinskega zaznavanja

Hitra urbanizacija ima številne negativne vplive na okolje in zdravje ljudi ter pomembno prispeva h globalnemu segrevanju. Eden izmed teh vplivov so tudi mestni toplotni otoki, ki jih povzročata človekova dejavnost in so opredeljeni kot temperaturne razlike med mestnimi in okoliškimi območji. Zaradi hitre urbanizacije v zadnjih desetletjih se Skopje spoprijema z izjemno močnimi učinki mestnih toplotnih otokov. Za proučevanje vloge pozidanih in zelenih površin pri nastanku površinskega mestnega toplotnega otoka je avtorica uporabila satelitske podatke Landsat ETM+, na podlagi katerih je analizirala temperaturo tal, in posnetke satelita Planet Scope DOVE visoke ločljivosti, na podlagi katerih je analizirala pozidane in zelene površine. Za geostatistične analize je uporabila 17 naključno izbranih podobmočij v Skopju. Izsledki raziskave kažejo pomembno povezavo med mest-

nim toplotnim otokom in pozidanimi površinami ter močno povezavo med zelenimi površinami in območji, na katerih ni mestnega toplotnega otoka, kar kaže, da se lahko učinek mestnih toplotnih otokov pomembno zmanjša z dodatnimi zelenimi površinami. Eden izmed pomembnih izsledkov raziskave je, da idealno razmerje med deležem pozidanih in zelenih površin, pri katerem je učinek mestnega toplotnega otoka šibek, v nekaterih primerih pa ga celo ni, znaša 40 : 60. Nadaljnje raziskave bi se morale osredotočati še na druge dejavnike, ki lahko vplivajo na nastanek mestnega toplotnega otoka.

Ključne besede: površinski mestni toplotni otok, daljinsko zaznavanje, satelitski posnetki, urbanizacija, temperatura tal

1 Uvod

V zadnjih desetletjih je hitra rast prebivalstva povzročila intenzivno urbanizacijo v večjem delu sveta. Čeprav je urbanizacija za države v razvoju pozitivna, lahko negativno vpliva na okolje in zdravje ljudi, če ne poteka pravilno (Morefield idr., 2018). Eden izmed stranskih učinkov urbanizacije – poleg zgoščanja pozidave, večanja nepropustnih površin in pomanjkanja zelenih prostorov – je pojav mestnih toplotnih otokov (ang. *urban heat islands*, v nadaljevanju: UHI). Navedeni izraz je bil prvič uporabljen leta 1818 (Bristow idr., 2012). Od začetka 20. stoletja je bila jakost teh otokov proučena že na stotinah pozidanih območij po svetu (Stewart in Oke, 2009), navedeno področje pa ostaja eno najbolj raziskovanih področij urbane klimatologije (Souch in Grimmond, 2006). Toplotni otok je opredeljen kot pojav, pri katerem se zaradi človekove dejavnosti zviša temperatura na pozidanih mestnih območjih v primerjavi z okoliškimi podeželskimi območji (Kaplan idr., 2018). Glavni dejavnik, ki vpliva na višje temperature zraka in tal na mestnih območjih (zlasti v okolici cest ter trgovskih in industrijskih območij) v primerjavi s povprečnimi temperaturami na zelenih površinah in stanovanjskih območjih, je močnejše segrevanje mestnih območij zaradi sončnega sevanja (Santamouris idr., 2011; Leal Filho idr., 2018). Čeprav na pojav teh otokov vplivajo mnogi dejavniki, je nadomeščanje naravnih zelenih površin s površinami, ki vpijajo toploto, eden največjih vzrokov za njegov nastanek (Leal Filho idr., 2018). Glede na to, kako so nastali, kako jih merimo in blažimo ter kakšen vpliv imajo, ločimo atmosferske in površinske mestne toplotne otoke (Munn, 2002).

Atmosferski mestni toplotni otoki se nanašajo na razlike v temperaturi zraka med mestnimi in podeželskimi (zelenimi) območji, površinske mestne toplotne otoke (angl. *surface urban heat islands*, v nadaljevanju: SUHI) pa lahko opredelimo na podlagi temperature površja, in sicer njegovega celotnega 3D-ovoja (Fernando idr., 2001). SUHI se običajno pojavljajo tako podnevi kot ponoči, običajno pa so močnejši podnevi, ko sije sonce in se toplota kopiči v mestu. Ponoči pozidane površine to toploto oddajajo in ker so prvotne zelene površine zamenjali grajeni objekti, naravnega hlajenja ni več. Zaradi sprememb v jakosti sončnega sevanja in pokrovnosti tal se jakost UHI spreminja z letnimi časi, učinek SUHI je tako običajno najmočnejši poleti. Najpogostejša metoda določanja SUHI so posredna merjenja, na primer z daljinskim zaznavanjem.

Za kartiranje in spremljanje SUHI raziskovalci uporabljajo satelitske instrumente daljinskega zaznavanja, opremljene s termičnimi senzorji, kot so MODIS (Miao idr., 2009; Schwarz idr., 2011; Tomlinson idr., 2012), Landsat TM,

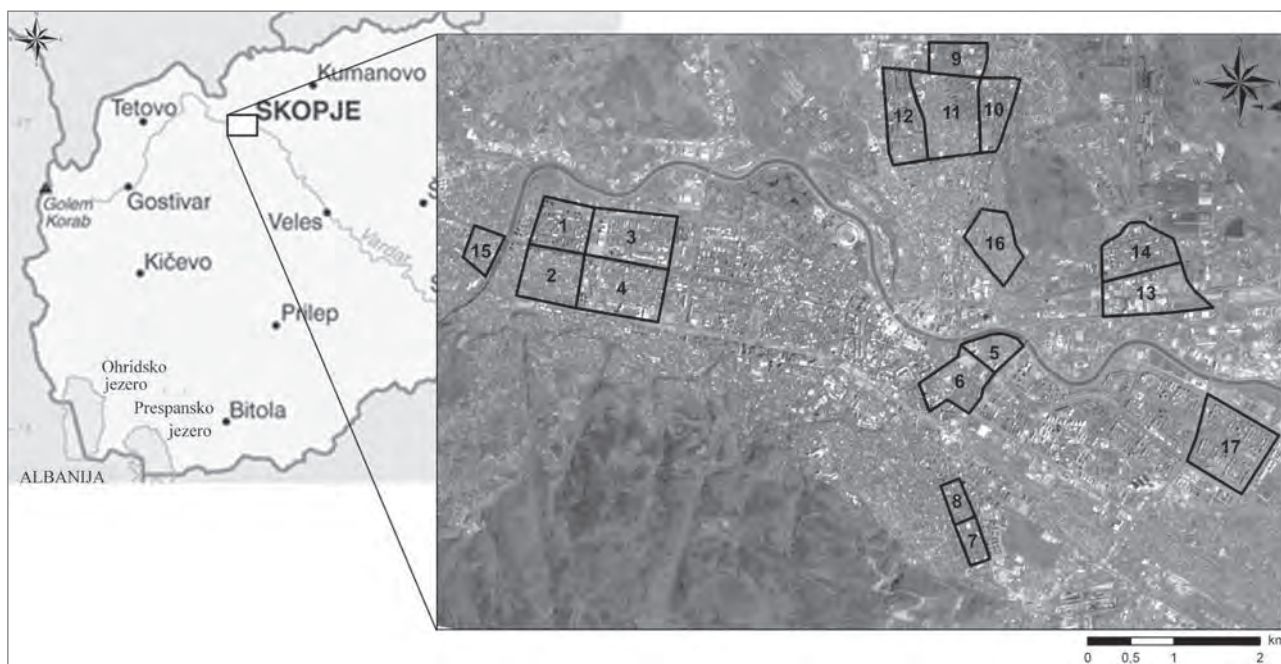
ETM+ in OLI/TIRS (Zha idr., 2003; Chen idr., 2006; Van der Hoeven in Wandl, 2018) ter ASTER (Liu in Zhang, 2011), ali kombinacijo vseh naštetih, kar je uporabno predvsem za analizo temperature tal (ang. *land surface temperature* ali LST). Za obsežna območja se uporabljajo senzorji nizke prostorske ločljivosti, kot je MODIS, za opazovanje posameznih mest ali manjših območij pa so primernejši senzorji srednje ločljivosti, kot sta Landsat in ASTER. Raziskave temperature tal in UHI so pokazale, da na temperaturo tal vpliva njihova pokrovnost (Owen idr., 1998), kar je spodbudilo proučevanje povezav med temperaturo in pokrovnostjo tal, zlasti prisotnostjo vegetacije (Gallo in Owen, 1999; Weng, 2001; Weng idr., 2004; Chen idr., 2006).

Pri proučevanju vloge pozidanih in zelenih površin pri nastanku SUHI na podlagi podatkov daljinskega zaznavanja srednje in visoke prostorske ločljivosti se je avtorica osredotočila na naslednja raziskovalna vprašanja:

- V katerih predelih Skopje se pojavlja UHI?
- Kakšna je povezava med SUHI, pozidanimi območji in zelenimi površinami?
- Kakšno je idealno razmerje pozidanih in zelenih površin na posameznem podobmočju, ki preprečuje nastanek pojava SUHI?

2 Metodologija

Skopje je glavno mesto Severne Makedonije na Balkanskem polotoku. Država ima približno 2,1 milijona prebivalcev, od katerih jih več kot 800.000 živi v glavnem mestu. Skopje se je razvilo v dolini, in sicer od vzhoda proti zahodu vzdolž Vardarja, ki se izliva v Egejsko morje. Leži približno 245 m nad morjem in pokriva približno 572 km². Širjenje mesta omejujejo gorovja proti severu in jugu, zaradi česar se je razvilo vzdolž Vardarja in Serave, majhne reke, ki priteka s severa. V zadnjih treh desetletjih se je Skopje temeljito spremenilo, te spremembe so vplivale na urbanistične procese (Stefanovska in Koželj, 2012). V zadnjem stoletju, v katerem se je število prebivalcev v mestu povečalo za več kot desetkrat, družbene spremembe niso vplivale samo na načrtovalske procese, ampak tudi na grajeno tkivo mesta, ki se je zato preobrazilo na podlagi najrazličnejših dejavnikov. Skopje je eno izmed mnogih mest, ki so jih prizadele stranske posledice hitre urbanizacije. Temperaturne razlike med mestom in njegovo okolico so bile v okviru mestne strategije reševanja vplivov podnebnih sprememb proučevane na podlagi meteoroloških meritev in termičnega snemanja (City of Skopje, 2017). Izsledki meteoroloških meritev so pokazali, da temperaturne razlike med različnimi deli mesta znašajo do 5 °C, rezultati termičnega snemanja pa so razkrili, da je temperatura v mestnem središču za 12 °C višja kot na okoliškem podeželskem območju. Kaplan idr. (2018) so potr-



Slika 1: Območje in podobmočja raziskave v Skopju, posneta s senzorjem satelita DOVE (RGB, 4, 3, 2; izdelala: Gordana Kaplan)

dili prisotnost UHI v Skopju na podlagi podatkov daljinskega zaznavanja, poleg tega so ugotovili povezavo med pozidanimi območji in UHI. Analiza meteoroloških podatkov med letoma 2009 in 2019 kaže tudi temeljite spremembe v temperaturi. Avgusta 2009 je bila najnižja izmerjena temperatura 14 °C, leta 2018 je narasla na 17 °C, leta 2019 pa že na 19 °C. Podobno je s povprečnimi in najvišjimi temperaturami, pri čemer je povprečna temperatura z 20 °C narasla na 30 °C, najvišja pa s 27 °C na 32 °C (WorldWeather, 2019).

Za analizo SUHI v Skopju je avtorica uporabila toplotni zemljevid, posneto s senzorjem Landsat ETM+ srednje prostorske ločljivosti, za določitev pozidanih in zelenih površin na proučevanih podobmočjih pa je uporabila podatke satelita Planet Scope DOVE. Na posnetkih satelita Landsat 7 se od leta 2003 pojavljajo napake zaradi okvarjenega korektorja snemalnih vrstic, pri čemer izgube podatkov ni samo v osrednjem delu posameznega posnetka (v velikosti približno 23 km). Ker ta del v celoti pokriva proučevano območje, dodatni popravki niso bili potrebni. Podatki satelita Planet Scope DOVE so bili pridobljeni s spletne strani družbe Planet, ki uporablja več kot 175 satelitov, ki snemajo večspektralne posnetke v štirih kanalih, pri čemer lahko na dan posnamejo več kot 300 milijonov kvadratnih kilometrov. Senzor, uporabljen v tej raziskavi, ima štiri večspektralne kanale (NIR in RGB) s prostorsko ločljivostjo 3 m. Pozidane in zelene površine na podobmočjih so bile iz podatkov visoke ločljivosti izluščene na podlagi normiranega diferencialnega vegetacijskega indeksa NDVI (enačba 1):

$$NDVI = \frac{NIR - Red}{NIR + Red} \quad (1),$$

pri čemer sta NIR in Red vrednosti odboja bližnje infrardeče in rdeče svetlobe.

Ker ima Skopje kombinacijo celinskega in submediteranskega podnebja, kar pomeni, da so temperature poleti visoke, so bili v raziskavi uporabljeni satelitski posnetki, posneti konec avgusta 2017.

Podatki satelita Landsat ETM+ in posnetki satelita Planet Scope DOVE so bili pridobljeni poleti (24. avgusta 2018), ko naj bi bil učinek SUHI najmočnejši. Za primerjavo temperatur tal in zraka so bili uporabljeni podatki o temperaturi zraka, ki so bili istega dne pridobljeni na več lokacijah v Skopju (slika 2). Kot je razvidno s slike 2, je najvišja temperatura zraka na isti dan, kot je območje preletel satelit, znašala približno 33 °C.

Kot že omenjeno, lahko učinek SUHI najbolj opazujemo s termičnimi satelitskimi senzorji in pridobljenimi podatki o temperaturi tal, ki se lahko izračuna iz termičnega kanala satelita Landsat. O tej temi je bilo objavljenih že več raziskav (Ekercin idr., 2016). V raziskavi, predstavljeni v tem članku, je avtorica uporabila algoritem, ki sta ga razvila Avdan in Jovanovska (2016), pri čemer ga je ustrezno prilagodila, da je lahko na podlagi podatkov satelita Landsat ETM+ izdelala zemljevid temperature tal. Pri tem je posodobila koeficiente termičnega kanala, ki so na voljo med metapodatki posameznega satelitskega posnetka.

$$K1_{kanal\ 6} = 666,09\ Wm^{-2}\ sr^{-1}\ \mu m^{-1} \quad (2)$$

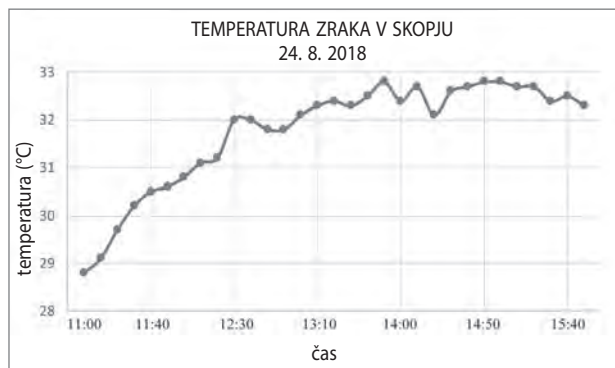
$$K2_{kanal\ 6} = 1,282,71\ K \quad (3)$$

Primerjava uporabljenih podatkov je temeljila na rezultatih za posamezna območja. Po oblikovanju zemljevida temperature tal je bil izdelan tudi zemljevid območij SUHI. Ker je SUHI opredeljen kot razlika v temperaturi podeželskih in mestnih območij, se lahko izračuna s preprostimi enačbami. Ma idr. (2010) so predlagali naslednjo enačbo za izračun SUHI, ki je bila uspešno uporabljena v mnogih raziskavah (Kaplan idr., 2018):

$$SUHI = \mu + \frac{\sigma}{2} \quad (4),$$

pri čemer je μ povprečna vrednost temperature tal na proučevanem območju, σ pa je standardni odklon temperature tal. Območja, ki imajo višje temperature kot območja SUHI, so območja, na katerih je opazen močan učinek UHI.

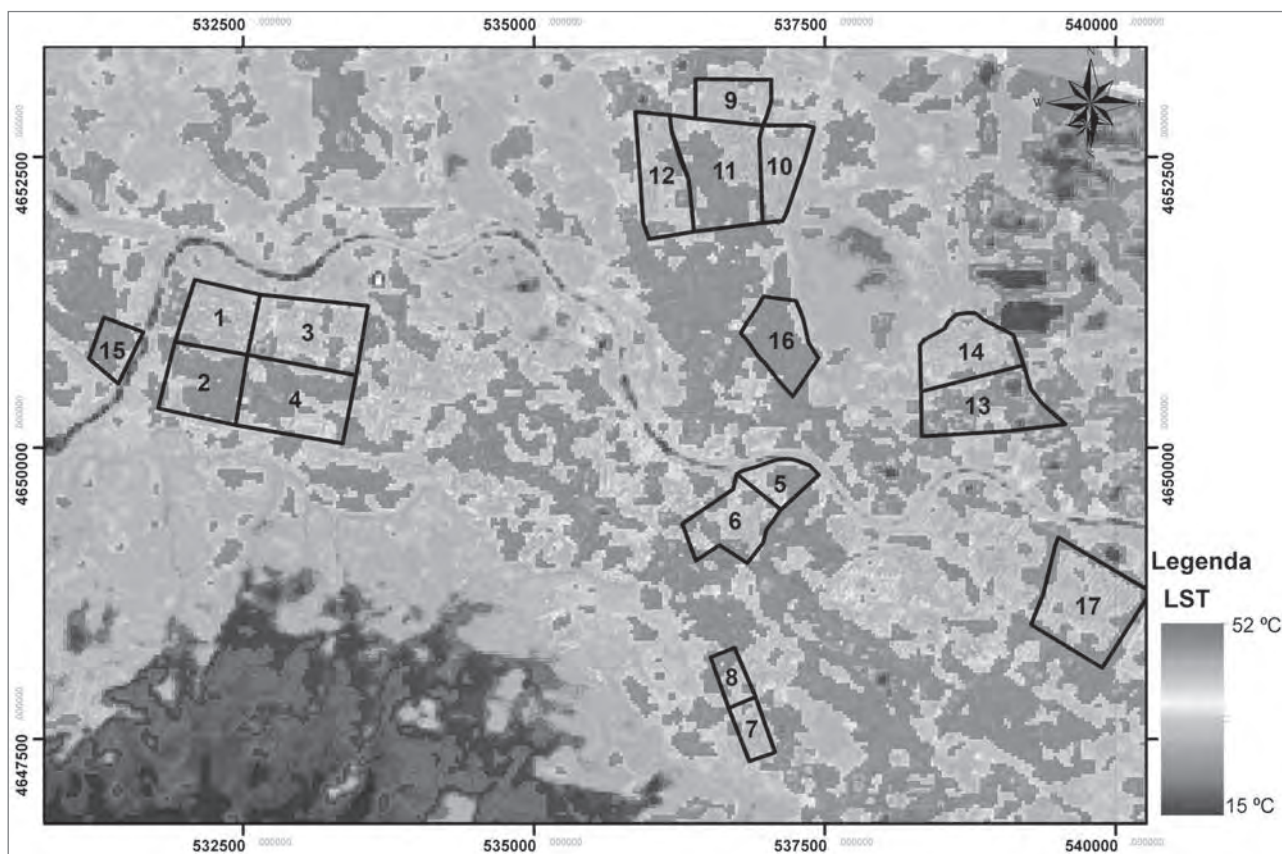
Nato je avtorica opravila statistično analizo območja SUHI ter pozidanih in zelenih območij na podlagi posnetkov, ki jih je prerazporedila v skladu z rezultati analiz temperatur tal in



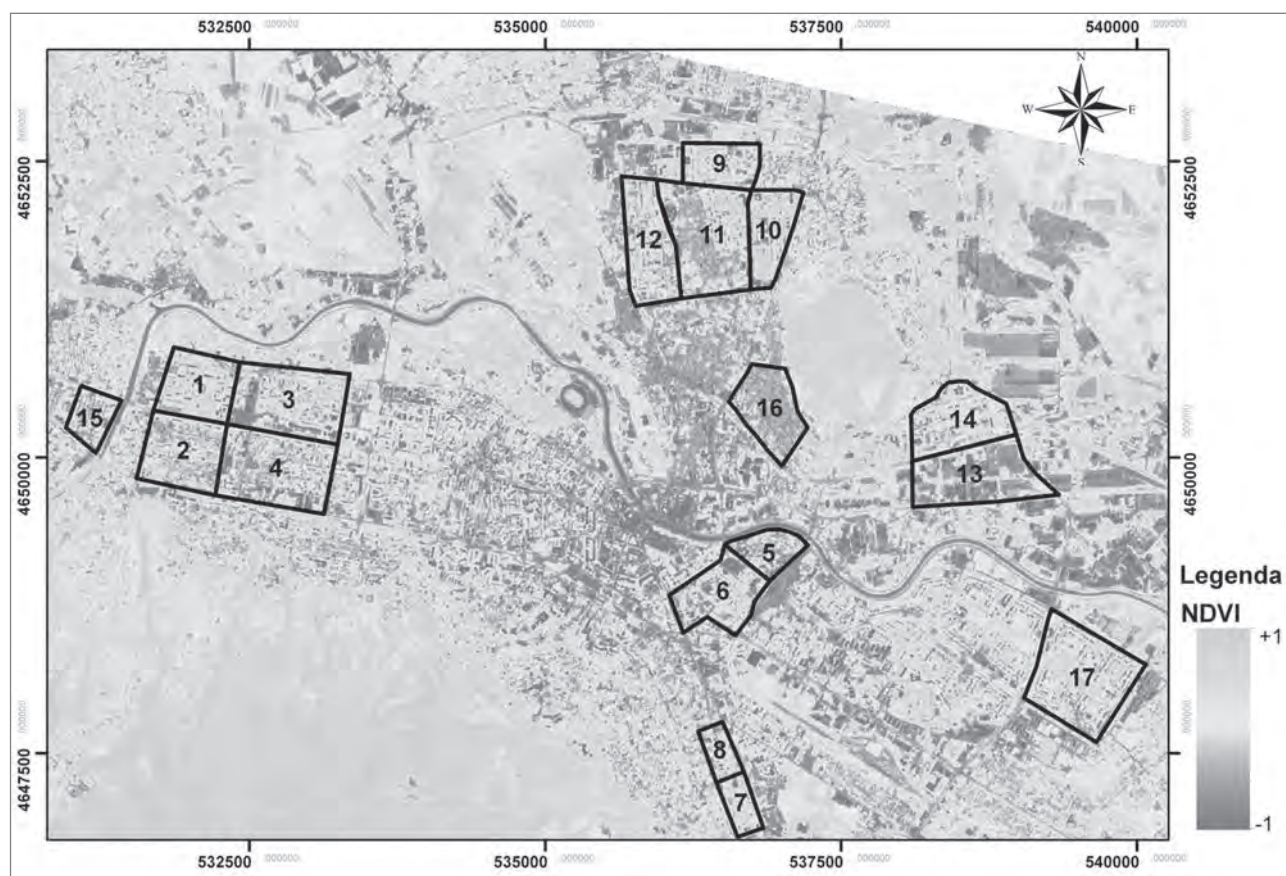
Slika 2: Temperatura zraka v Skopju 24. avgusta 2018 (izdelala: Gordana Kaplan)

Preglednica 1: Podrobnosti uporabljenih satelitskih podatkov

Podrobnost	Satelit		
	Landsat ETM+	Planet DOVE	Scope
Ločljivost	30 m	3 m	
Kanali	8	4	
Datum pridobitve	24. 8. 2018	24. 8. 2018	
Uporabljeni podatki	temperatura tal	NDVI	



Slika 3: Zemljevid temperature tal (LST) in učinka SUHI v Skopju, izdelana na podlagi podatkov satelita Landsat ETM+ (izdelala: Gordana Kaplan)



Slika 4: Zemljevid NDVI za Skopje (izdelala: Gordana Kaplan)

SUHI. Tako je na posnetku satelita Planet Scope DOVE (Planet Team, 2017) najprej določila zelene in pozidane površine, nato pa še temperaturo tal ter površino območij SUHI in območij, na katerih se UHI ne pojavlja, izraženo v kvadratnih metrih, ki jih je statistično in vizualno primerjala. Podrobnosti o podatkih so razvidne v preglednici 1.

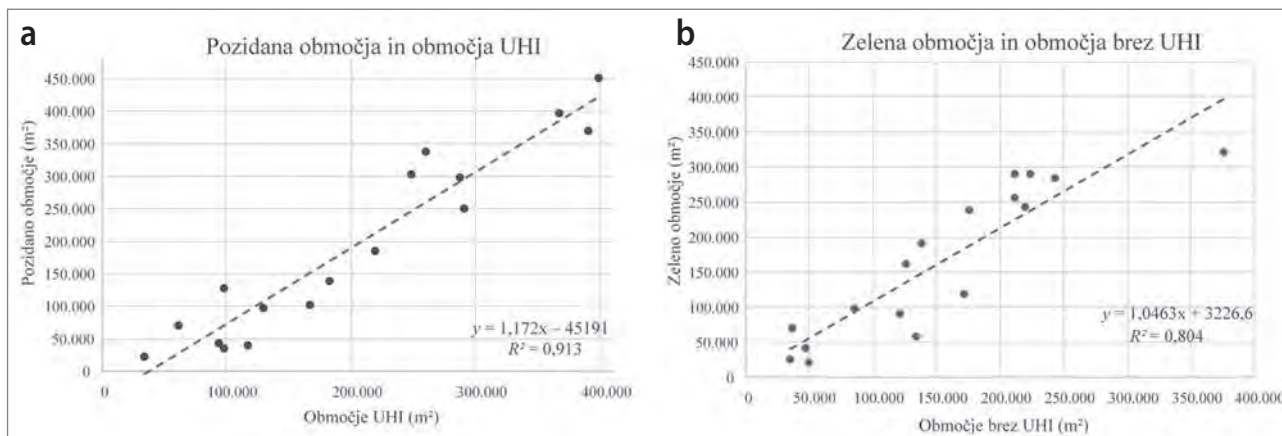
3 Izsledki in razprava

Podobno kot izsledki ene izmed prejšnjih raziskav je tudi ta raziskava potrdila prisotnost SUHI v več delih Skopja. Analize so pokazale, da se SUHI pojavlja na tistih območjih, na katerih je temperatura tal višja od 34 °C (slika 3). Učinek SUHI je običajno najmočnejši na gosto pozidanih območjih, kar potrjujejo tudi rezultati analiz NDVI, razvidni na sliki 4.

Za vsako podobmočje Skopja so bili določeni štirje parametri: pozidana in zelena območja, območja, na katerih se pojavlja SUHI, in območja, na katerih se ne pojavlja (Preglednica 2). Izsledki so pokazali pomembno povezavo med pozidanimi območji in SUHI ($r = 0,92$) ter močno povezavo med območji, poraslimi z drevesi, in območji, na katerih se SUHI ne pojavlja ($r = 0,95$). Koeficienta determinacije za omenjeni primerjavi sta tudi precej visoka in kažeta, da lahko več ko 84 % območij

Preglednica 2: Rezultati geostatističnih analiz (v %)

Id. št.	Pozidana območja	Zelena območja	SUHI
1	35,64	64,36	7,82
2	65,96	34,04	71,14
3	54,40	45,60	24,87
4	69,89	30,11	57,49
5	77,96	22,04	45,96
6	63,54	36,46	39,21
7	28,61	71,39	8,58
8	56,38	43,62	44,65
9	40,35	59,65	9,81
10	35,66	64,34	8,12
11	63,82	36,18	51,26
12	46,39	53,61	21,53
13	75,16	24,84	73,32
14	42,71	57,29	12,41
15	66,47	33,53	76,14
16	89,10	10,90	85,89
17	39,56	60,44	31,79



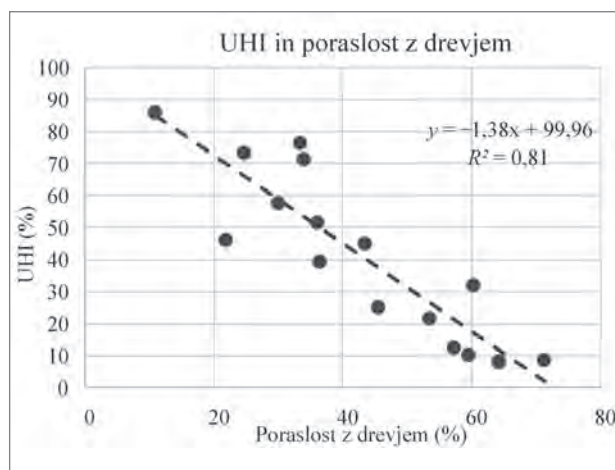
Slika 5: Povezava med pozidanimi območji in UHI (a) ter povezava med območji, poraslimi z drevesi, in območji brez UHI (b) (izdelala: Gordana Kaplan)

SUHI pojasnimo z linearno povezavo s pozidanimi površinami (slika 5), 90 % območij, na katerih se SUHI ne pojavlja, pa z linearno povezavo z območji, poraslimi z drevesi (slika 5).

Kot kažejo izsledki, je pojav UHI močno povezan s pozidanimi površinami v posamezni soseski. Zato je treba določiti idealno razmerje, pri katerem pozidane površine ne povzročajo pojavnosti UHI ali ga vsaj ublažijo. V ta namen so bili rezultati pretvorjeni v odstotke, na podlagi katerih so bile opravljene statistične analize. Na večini območij, na katerih je bil delež pozidanih površin večji od 40 %, je bil močan vpliv SUHI (slika 6). Vizualna primerjava pa je pokazala, da mora biti teh 40 % enakovredno porazdeljenih po območju, da je učinek SUHI še vedno močan.

Kot je razvidno s slike 6, sta pojav UHI in poraslost z drevjem obratno sorazmerna. To pomeni, da se pojav UHI zmanjšuje z večanjem zelenih površin. To velja za 81 % proučevanih območij, kar pomeni, da na pojav UHI vplivajo tudi drugi dejavniki. Kot je pokazala vizualna primerjava, je eden izmed teh dejavnikov gostota pozidanega območja. Podobnočiji 6 in 11 imata na primer približno enaka deleža pozidanih površin (tj. 63,5 oziroma 63,8 %), vendar je na podobnočju 11 zaradi goste pozidave približno 11 % več površin pod vplivom UHI. Najboljše rezultate so imela podobnočja 1, 7, 9 in 10, na katerih je bil delež površin, na katerih se pojavlja UHI, manjši od 10 %, delež pozidanih površin pa ni bil večji od 40 %.

Izsledki raziskave potrjujejo trenutno stanje v Skopju, kjer temperaturne razlike med mestom in njegovo okolico znašajo do 12 °C. Pojav UHI je razviden tudi iz meteoroloških podatkov za obdobje 2009 – 2019, v katerem se je povprečna temperatura povišala za 10 °C. Navedene spremembe so opazile tudi oblasti in od leta 2016 se to področje podrobno proučuje. Konec leta 2018 so oblasti na podlagi smernic ameriške agencije za varovanje okolja, ki je odgovorna za blaženje



Slika 6: Povezava med UHI in poraslostjo z drevjem (izdelala: Gordana Kaplan)

vplivov UHI v ZDA, objavile akcijski načrt za ublažitev učinkov UHI v Skopju. Glavne strategije zmanjševanja pojavnosti UHI vključujejo povečanje zelenih površin, ureditev zelenih streh, hladnih streh in hladnih tlakov ter uresničevanje načel pametne rasti. V okviru akcijskega načrta je poleg tega predvidena zasaditev milijon dreves. Izsledki predstavljene raziskave bi bili lahko uporabni za vnaprejšnje določanje območij za zasaditev dreves in ureditev drugih zelenih površin.

4 Sklep

V članku je avtorica na podlagi posnetkov satelita Landsat ETM+ proučevala pojav SUHI v Skopju ter analizirala vlogo pozidanih in zelenih površin pri jakosti učinka SUHI na podlagi posnetkov satelita Planet Scope DOVE visoke ločljivosti. Ker je bila prisotnost UHI v Skopju že potrjena v eni izmed prejšnjih raziskav (Kaplan idr., 2018), je avtorica analizirala sedemnajst naključno izbranih podobnočij v mestu, na podlagi česar je iskala odgovore na več zastavljenih razis-

kovalnih vprašanj. Obravnavana podobmočja so se razlikovala po velikosti, lokaciji in učinku UHI. Da bi proučila povezavo med pozidanimi površinami, zelenimi območji in območji, na katerih se pojavlja UHI, je opravila več geostatističnih analiz. Izsledki raziskave kažejo, da se UHI pojavlja v več predelih Skopja.

Kot je bilo pričakovano, so rezultati analiz pokazali močno povezavo med pojavom SUHI in pozidanimi površinami ($R^2 = 84$), kar kaže, da so SUHI posledica človekove dejavnosti. Močna povezava obstaja tudi med zelenimi površinami in območji, na katerih se UHI ne pojavlja ($R^2 = 90$), kar kaže, da lahko poraslost z drevjem močno ublaži učinek UHI ali SUHI. Primerjava z meteorološkimi podatki, ki jih je istega dne zbral satelit, opremljen s termičnim senzorjem, je pokazala, da se SUHI pojavlja na območjih, na katerih je temperatura tal višja od izmerjene temperature zraka.

Izsledki raziskave kažejo, da se v 81 % primerov UHI v Skopju pojavljajo zaradi človekove dejavnosti ali pozidanih površin. Dodatni dejavnik, ki vpliva na pojav UHI, je gostota pozidanih in zelenih površin. Izsledki so pokazali še, da je idealno razmerje med pozidanimi in zelenimi površinami, ki preprečuje nastanek UHI ali močno ublaži njegov učinek, 40 : 60. Da bi se izognili nastanku UHI, morajo biti pozidane površine med seboj ločene in obdane z drevesi. Navedeni izsledki lahko urbanistom in okoljskim inženirjem pomagajo pri izbiri najustreznejših ukrepov blaženja učinkov UHI, ki so lahko škodljivi tako za okolje kot zdravje ljudi. V nadaljnjih raziskavah bi bilo treba proučiti še druge dejavnike, ki lahko vplivajo na nastanek UHI na pozidanih območjih, in določiti razmerje med zelenimi in pozidanimi površinami, ki omogoča blaženje učinka UHI, tudi na drugih proučevanih območjih.

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Viri in literatura

Avdan, U., in Jovanovska, G. (2016): Algorithm for automated mapping of land surface temperature using LANDSAT 8 satellite data. *Journal of Sensors*, 2016, Article ID 1480307. DOI: 10.1155/2016/1480307

Bristow, R. S., Blackie, R., in Brown, N. (2012): Parks and the urban heat island: A longitudinal study in Westfield, Massachusetts. V: Fisher, C. L., in Watts, C. E., Jr. (ur.): *Proceedings of the 2010 Northeastern Recreation Research Symposium. Gen. Tech. Rep. NRS-P-94*, str. 224–230. Newtown Square, PA, U.S. Department of Agriculture, Forest Service, Northern Research Station. DOI: 10.1007/s10980-010-9515-9

Chen, X.-L., Zhao, H.-M., Li, P.-X., in Yin, Z.-Y. (2006): Remote sensing image-based analysis of the relationship between urban heat island and land use/cover changes. *Remote Sensing of Environment*, 104(2), str. 133–146. DOI: 10.1016/j.rse.2005.11.016

City of Skopje (2017): *Resilient Skopje, Climate change strategy report*. Skopje.

Ekerin, S., Orhan, O., in Dadaser-Celik, F. (2016): Investigating land surface temperature changes using Landsat-5 data and real-time infrared thermometer measurements at Konya closed basin in Turkey. *International Journal of Engineering and Geosciences*, 4(1), str. 16–27. DOI: 10.26833/ijeg.417151

Fernando, H., Lee, S., Anderson, J., Princevac, M., Pardyjak, E., in Grosman-Clarke, S. (2001): Urban fluid mechanics: Air circulation and contaminant dispersion in cities. *Environmental Fluid Mechanics*, 1(1), str. 107–164. DOI: 10.1023/a:1011504001479

Gallo, K. P., in Owen, T. W. (1999): Satellite-based adjustments for the urban heat island temperature bias. *Journal of Applied Meteorology*, 38(6), str. 806–813. DOI: 10.1175/1520-0450(1999)038<0806:sbaftu>2.0.co;2

Kaplan, G., Avdan, U., in Avdan, Z. Y. (2018): *Urban heat island analysis using the Landsat 8 satellite data: A case study in Skopje, Macedonia*. Skopje, Multidisciplinary Digital Publishing Institute Proceedings. DOI: 10.3390/ecrs-2-05171

Leal Filho, W., Icaza, L. E., Neht, A., Klavins, M., in Morgan, E. A. (2018): Coping with the impacts of urban heat islands. A literature based study on understanding urban heat vulnerability and the need for resilience in cities in a global climate change context. *Journal of Cleaner Production*, 171, str. 1140–1149. DOI: 10.1016/j.jclepro.2017.10.086

Liu, L., in Zhang, Y. (2011): Urban heat island analysis using the Landsat TM data and ASTER data: A case study in Hong Kong. *Remote Sensing*, 3(7), str. 1535–1552. DOI: 10.3390/rs3071535

Ma, Y., Kuang, Y., in Huang, N. (2010): Coupling urbanization analyses for studying urban thermal environment and its interplay with biophysical parameters based on TM/ETM+ imagery. *International Journal of Applied Earth Observation and Geoinformation*, 12(2), str. 110–118. DOI: 10.1016/j.jag.2009.12.002

Miao, S., Chen, F., LeMone, M. A., Tewari, M., Li, Q., in Wang, Y. (2009): An observational and modeling study of characteristics of urban heat island and boundary layer structures in Beijing. *Journal of Applied Meteorology and Climatology*, 48(3), str. 484–501. DOI: 10.1175/2008jamc1909.1

Morefield, P., Fann, N., Grambsch, A., Raich, W., in Weaver, C. (2018): Heat-related health impacts under scenarios of climate and population change. *International Journal of Environmental Research and Public Health*, 15(11), str. 2438. DOI: 10.3390/ijerph15112438

Munn, T. (2002): *Encyclopedia of global environmental change*. Chichester, VB, Wiley.

Owen, T., Carlson, T., in Gillies, R. (1998): An assessment of satellite remotely-sensed land cover parameters in quantitatively describing the climatic effect of urbanization. *International Journal of Remote Sensing*, 19(9), str. 1663–1681. DOI: 10.1080/014311698215171

Planet Team (2017): *Planet application program interface: In space for life on Earth*. San Francisco, CA. Dostopno na: <https://api.planet.com> (sneto 21. 9. 2019).

Santamouris, M., Synnefa, A., in Karlessi, T. (2011): Using advanced cool materials in the urban built environment to mitigate heat islands and improve thermal comfort conditions. *Solar Energy*, 85(12), str. 3085–3102. DOI: 10.1016/j.solener.2010.12.023

Schwarz, N., Lautenbach, S., in Seppelt, R. (2011): Exploring indicators for quantifying surface urban heat islands of European cities with MODIS land surface temperatures. *Remote Sensing of Environment*, 115(12), str. 3175–3186. DOI: 10.1016/j.rse.2011.07.003

Souch, C., in Grimmond, S. (2006): Applied climatology: Urban climate. *Progress in Physical Geography*, 30(2), str. 270–279. DOI: 10.1191/0309133306pp484pr

Stefanovska, J., in Koželj, J. (2012): Urban planning and transitional development issues: The case of Skopje, Macedonia. *Urbani izziv*, 23(1), str. 91–100. DOI: 10.5379/urbani-izziv-en-2012-23-01-002

Stewart, I., in Oke, T. (2009): *Newly developed "thermal climate zones" for defining and measuring urban heat island magnitude in the canopy layer*. Prispevek je bil predstavljen na konferenci z naslovom Eighth Symposium on Urban Environment, ki je potekala od 11. do 15. januarja v Phoenixu v Arizoni. Tipkopis.

Tomlinson, C., Chapman, L., Thornes, J., in Baker, C. (2012): Derivation of Birmingham's summer surface urban heat island from MODIS satellite images. *International Journal of Climatology*, 32(2), str. 214–224. DOI: 10.1002/joc.2261

Van der Hoeven, F., in Wandl, A. (2018): Hotterdam: Mapping the social, morphological, and land-use dimensions of the Rotterdam urban heat island. *Urbani izziv*, 29(1), str. 58–72. DOI: 10.5379/urbani-izziv-en-2018-29-01-001

Weng, Q. (2001): A remote sensing? GIS evaluation of urban expansion and its impact on surface temperature in the Zhujiang Delta, China. *International Journal of Remote Sensing*, 22(10), str. 1999–2014. DOI: 10.1080/01431160152043676

Weng, Q., Lu, D., in Schubring, J. (2004): Estimation of land surface temperature–vegetation abundance relationship for urban heat island studies. *Remote Sensing of Environment*, 89(4), str. 467–483. DOI: 10.1016/j.rse.2003.11.005

WorldWeather (2019): *Skopje monthly climate averages*. Dostopno na: <https://www.worldweatheronline.com/skopje-weather-averages/karpos/mk.aspx> (sneto 21. 9. 2019).

Zha, Y., Gao, J., in Ni, S. (2003): Use of normalized difference built-up index in automatically mapping urban areas from TM imagery. *International Journal of Remote Sensing*, 24(3), str. 583–594. DOI: 10.1080/01431160304987

UDK: 911.52+911.53:347.823.2:349.414
DOI: 10.5379/urbani-izziv-2019-30-02-005

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Vzorci zasedbe prostora za potrebe sprostitve in rekreacije v obmestnem prostoru: primer Jezero pri Podpeči, Slovenija

Članek obravnava vprašanja o nosilni sposobnosti prostora za sprostitev in rekreacijo v obmestnih krajinah visokih naravnih ali kulturnih vrednot. Temelji na konceptu pristopov od spodaj navzgor, pri čemer uporablja metodo opazovanja in vedenjskih zemljevidov, ki temelji na drobnih kvalitativnih podatkih. Osredotoča se na zasnovo koncepta nosilne sposobnosti naravno vrednega območja za rabo in na ugotavljanje ocene nosilne sposobnosti takega območja za rabo. Izhajali smo iz Goličnik Marušić (2015), ki nakazuje smisel obravnave razvoja in načrtovanja zelene infrastrukture z vidika uporabnikovih potreb in navad ter s konceptom nosilne sposobnos-

ti prostora za zasedbo vključili tudi varstveni vidik. Na podlagi izvedenih podatkov, pridobljenih z opazovanjem in kartiranjem vedenja, smo komentirali dejansko rabo, uporabnike z vidika starostnih skupin ter način zasedanja prostora, pogostost pojavljanja dejavnosti in načine zadrževanja v prostoru na primeru Jezera pri Podpeči, priljubljene izletniško-rekreacijske točke na robu Ljubljanskega barja.

Ključne besede: nosilna sposobnost, zelena infrastruktura, vedenjski zemljevid, periurbane krajine, prostorsko načrtovanje

1 Uvod

Prispevek se osredotoča na proučevanje uporabe obmestnih krajin za potrebe rekreacije ter na razvoj in testno preverjanje koncepta nosilne sposobnosti prostora za rekreacijo in sprostitev. Temelji na komentarjih opazovanj in vedenjskih zemljevidov vzorcev uporab prostora, pri čemer so bila opazovanja pilotno izvedena v okviru projekta LOS_DAMA! - Landscape and Open Space Development in Alpine Metropolitan Areas, ki je bil odobren na drugem razpisu programa mednarodnega teritorialnega sodelovanja Območje Alp 2014–2020. Projekt se ukvarja s krajino v zaledju mestnih območij kot delom širših omrežij zelene infrastrukture, ki je privlačna zaradi naravnih in kulturnih virov ter dediščine. Zaradi tega je s svojo pestrostjo in lego pogosto izpostavljena pritiskom za različne rabe. Na podlagi opazovanj dveh izbranih območij Ljubljanskega barja, tipične zaledne krajine ljubljanske urbane aglomeracije, smo predstavili nekatera razmišljanja o možnih spremljanjih pritiskov na prostor zaradi potrebe po sprostivni in rekreaciji ter opredelili koncept nosilne sposobnosti območja za rabo. Opazovanja in kartiranja vedenj so bila pilotno izvedena za Jezero pri Podpeči, priljubljeno in pogosto obiskano destinacijo na Ljubljanskem barju. Jezero pri Podpeči je kot brezno s stalnim ponorom zavarovano kot geomorfološka naravna vrednota državnega pomena, njegovo širše območje je zavarovano tudi kot hidrološka in ekosistemska naravna vrednota državnega pomena in je hkrati naravni spomenik. Širše območje jezera spada v tretje varstveno območje krajinskega parka Ljubljansko barje (ARSO, 2019).

Zelena infrastruktura kot interpretacija trajnostnega koncepta prostorskega načrtovanja in prilagajanja podnebnim spremembam omogoča različne priložnosti za blaženje škodljivih učinkov, ob hkratnem zagotavljanju okoljskih, gospodarskih in socialnih koristi, vključno s kakovostjo bivanja in zdravjem ljudi. Koncept zelene infrastrukture se je v zadnjih desetletjih uveljavil v glavnem kot protiutež sivi infrastrukturi (grajeno okolje). Njegova vloga se je najprej in najmočneje izrazila na področju blaženja podnebnih sprememb v mestih (npr. Gill idr., 2007). Z vsebinsko-tehnoloških vidikov se je tako kot v prostorskem načrtovanju nasploh pri evidencah elementov zelene infrastrukture uveljavil pristop na podlagi GIS, s poudarkom na interpretaciji podatkov namenske rabe in morfoloških značilnosti (npr. Chang idr., 2011). V zadnjem času se po številnih študijah, ki dokazujejo pozitivno korelacijo med zelenimi odprtimi prostori v mestih in človekovim zdravjem (npr. Ward Thompson, 2013), ta vloga prenaša tudi na vlogo zelene infrastrukture. Po čedalje večjem uveljavljanju koncepta ekosistemskih storitev je boljše tudi razumevanje zelene infrastrukture kot nosilke posameznih vidikov ekosistemskih storitev (oskrbovalne, uravalne, kulturne, podporne), kar

zahteva tudi večdisciplinarni pristop k obravnavi zelene infrastrukture (npr. Tzoulas idr., 2007; Taylor in Hochuli, 2017) in oceno večnamenske vloge zelene infrastrukture za največje možno zagotavljanje ekosistemskih storitev (Meerow in Newell, 2016).

Pri čedalje več utemeljevanjih konceptov pomena biotske raznovrstnosti, varstva okolja in načrtovanja prostora v obliki koncepta zelene infrastrukture (npr. Evropska komisija, 2013; Evropska komisija, 2016), ekosistemskih storitev (npr. Evropska komisija, 2018) in na naravi temelječih rešitev (npr. Raymond idr., 2017) je z vidika urejanja prostora ključno vzpostaviti nove mehanizme in na elemente prostora pogledati ne le z vidika njihove fizične pojavnosti in klasifikacije v sivo, modro ali zeleno infrastrukturo, temveč prostor razumeti kot sistem procesov narave in človeka (Goličnik Marušič in Praper Gulič, 2018). Podobno utemeljeta tudi Parker in Zegoni de Baro (2019) z zavzemanjem za to, da bi se koncept zelene infrastrukture razširil in obsegal širše vidike, ki so lahko povezani z zeleno infrastrukturo. Tudi v tem članku zeleno infrastrukturo obravnavamo s širšega vidika, tj. z vidika njene privlačnosti za rekreacijsko rabo. Izbranih elementov zelene infrastrukture ne osvetlimo neposredno z njihovimi morfološkimi, strukturnimi ali ekološkimi lastnostmi, temveč se osredotočamo na interpretacijo teh prostorov z vidika rekreativnih dejavnosti, ki jih ti prostori spodbujajo. Tak pristop k obravnavi zelene infrastrukture je nov in se neposredno navezuje na načrtano hipotezo: Vrsta, pogostost, intenzivnost in dimenzije uporab prostora lahko opredelijo nosilnost prostora in s tem izražajo razsežnosti zasedbe prostora za rekreacijo, ki jo prostor/narava lahko prenese.

2.2 Metodologija in zajem podatkov

V skladu z metodo opazovanje in vedenjski zemljevidi (npr. Goličnik in Ward Thompson, 2002; Goličnik, 2006) sta bila predhodno izdelana urnik in protokol opazovanj, izbran je bil način zapisa opazovanj ter pripravljene so bili simboli in kartografske osnove za zapis opazovanj. Opazovanje in evidentiranje vedenj sta bila izvedena od 9. 6. do 3. 7. 2018, ki zajema čas konca šolskega leta in začetka počitnic, ter na dodatni opazovalni dan 19. 8. 2018, ob izteku šolskih počitnic. Celoten dan je bil razdeljen na nize dopoldanskih in popoldanskih opazovanj. Dopoldanska opazovanja so bila izvedena med 10.00 in 13.00, popoldanska pa med 14.00 in 19.00. Posamezno opazovanje območja, ki ga je mogoče proučevati s pogledom in pri tem oceniti starost, spol in dejavnost uporabnika, je na Jezero pri Podpeči, kjer je mogoče celotno območje uporabe zaradi strukturno-morfoloških lastnosti območja opazovati naenkrat, trajalo 30 minut. Glede na opazovalne intervale je bilo opravljenih 28 opazovanj. Popoldanska opazovanja so pogosto prekinile ali onemogočile poletne nevihte. Opazovanja

Tabela 1: Kodirni sistem za vnos ročno zbranih podatkov v program ArcGIS

Spremenljivka	Točkovni vnosi		Poligonski vnosi	
	Šifra	Opis/razred	Šifra	Opis/razred
Dejavnost	1	čolnariti	1	čolnariti
	2	hoditi	2	hoditi
	3	hoditi s psom		
	4	igrati se	4	igrati se
	5	kolesariti		
	6	ležati	6	ležati
	7	plavati	7	plavati
	8	loviti ribe	8	loviti ribe
	9	sedeti	9	sedeti
	10	sedeti s psom		
	11	stati	11	stati
		12	imeti piknik	
Starost	1	≤ 5 let – otrok/družina	4	družina
	2	6 –12 let – otrok/družina	4	družina
	3	13 –19 let – najstnik	1	najstnik
	4	20 –34 let – mlajši odrasel	2	mlajši odrasel
	5	35 –50 let – mlajši odrasel	2	mlajši odrasel
	6	51 –65 let – starejši odrasel	3	starejši odrasel
	7	> 65 let – starejši odrasel	3	starejši odrasel
Spol	1	moški	1	skupina moških
	2	ženska	2	skupina žensk
			3	mešana skupina
			4	družina
Velikost skupine			3	3 ljudje
			4	4 ljudje
			5	5 –10 ljudi
			6	10 ljudi in več
Del dneva	1	10.00 –12.00	1	10.00 –12.00
	2	12.00 –14.00	2	12.00 –14.00
	3	10.00 –14.00	3	10.00 –14.00
	4	14.00 –17.00	4	14.00 –17.00
	5	17.00 –19.00	5	17.00 –19.00
	6	14.00 –19.00	6	14.00 –19.00
Del tedna	1	pon. –pet.	1	pon. –pet.
	2	sob. –ned. /praznik	2	sob. –ned. /praznik
Vreme	1	sončno	1	sončno
	2	delno oblačno	2	delno oblačno
	3	oblačno	3	oblačno
	4	deževno	4	deževno
Temperatura	1	15 –19°C	1	15 –19°C
	2	20 –24°C	2	20 –24°C
	3	25 –29°C	3	25 –29°C
	4	30 –34°C	4	30 –34°C
	5	≥ 35°C	5	≥ 35°C



Slika 1: Velik obisk: Število obiskovalcev jezera, 17. 6. 2018, in obiskanost sredi dneva 19. 8. 2018 (foto: Manca Dremel)



Slika 2: Nasprotje med velikim in majhnim obiskom: Obisk ob slabšem vremenu 29. 6. 2018 in iskanje sence 19. 8. 2018 (foto: Manca Dremel)

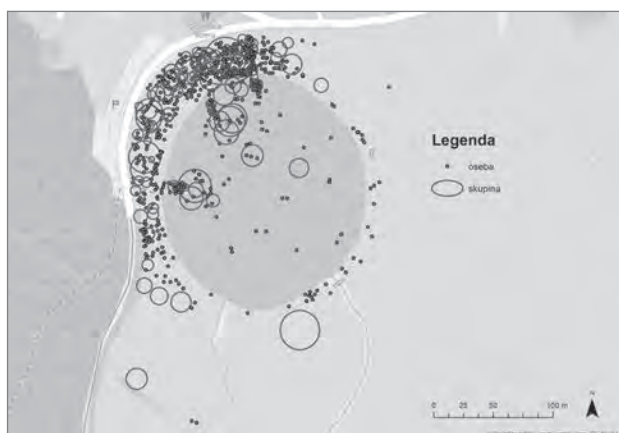
so bila predvidena med tednom in ob koncu tedna, a so začetna opazovanja pokazala, da je z vidika intenzitete obiska ključno pridobiti podatke ob koncu tedna. Končno razmerje opazovalnih dni je bilo: štiri dni ob koncu tedna in šest dni med tednom. V nadaljevanju so podrobneje predstavljeni izsledki opazovanj, rezultati so komentirani za dneve, ko je bil obisk velik.

Podatki opazovanj so bili zajeti ročno, in sicer tako, da so bili posamezniki ali pari evidentirani kot točkovni simboli, ki so izražali vrsto dejavnosti in spol uporabnika. Dodatno so bili opremljeni s šiframi za starostno skupino, ki ji posameznik pripada, in za čas zadrževanja ali trajanje dejavnosti na prostoru. Kadar so bili v dejavnost vključeni trije ali več posameznikov, so bila kartirana območja skupin, pri čemer so bile ob območju podane oznake za vrsto dejavnosti ter šifre za sestavo skupine glede na starost in spol ter velikostni red skupine (število posameznikov v skupini). Poleg osnovnih zapisov o tem, kaj obiskovalci počnejo, kje, kako dolgo, koliko so stari in ali so moški ali ženske, so bili za vse spremenljivke (posamezniki in skupine) zbrani še podatki, ki pojasnjujejo druge okoliščine: del

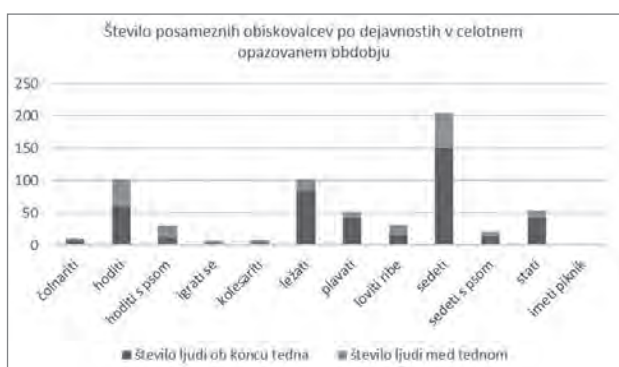
dneva, del tedna in osnovni podatki o vremenu. Kartografska osnova za zaris vedenjskih zemljevidov je bilo kartografsko gradivo odprtokodnega dostopa OpenStreetMap. Digitalni zapis ročno zbranih podatkov je nastal z računalniškim programom ArcGIS (Esri). Posamezniki so bili vneseni kot spremenljivke tipa točka in skupine kot spremenljivke tipa poligon. Vsakemu vnosu je bila pripisana zaporedna identifikacijska številka in vsak vnos je bil opremljen po naslednjem kodirnem sistemu.

3 Analiza

Dejanska raba prostora za rekreacijo in sprostitev je bila analizirana in komentirana glede na niz parametrov, ki lahko značilno opredeljujejo ali zaznamujejo zasedbo prostora. Osnovne opisne analize izhajajo iz neposredno zbranih podatkov in uporabo prostora komentirajo glede na število obiskovalcev, vrsto druženja (posamično ali v paru, skupine), čas obiska (dopoldne ali popoldne, konec tedna ali med tednom) in starostno strukturo obiskovalcev (otroci, mladostniki, mlajši odrasli, starejši odrasli, starostniki). Za pripravo koncepta nosilne spo-



Slika 3: Kumulativni vedenjski zemljevid za Jezero pri Podpeči, junij – avgust 2018 (izdelala: Nevenka Mihevc, vir: OpenStreetMap, terenski zajem podatkov)



Slika 4: Število posameznih obiskovalcev po dejavnostih v celotnem opazovanem obdobju (izdelala: Barbara Goličnik Marušič)



Slika 5: Število skupin (ne glede na velikost skupine) v celotnem opazovanem obdobju (izdelala: Barbara Goličnik Marušič)

sobnosti prostora za zasedbo s prostočasnimi dejavnostmi so bili pomembni še izvedeni podatki, na primer opredelitev vrste dejavnosti (dejanske in razvrščene v skupine: aktivne, pasivne, v prehodu čez prostor), načini zapolnjevanja prostora ter pogostost (pogosto, občasno, redko izvedene) in intenziteta dejavnosti (število prisotnih, vključenih v isto dejavnost). Izsledki teh analiz so navedeni v treh podpoglavjih.

3.1 Osnovne opisne analize

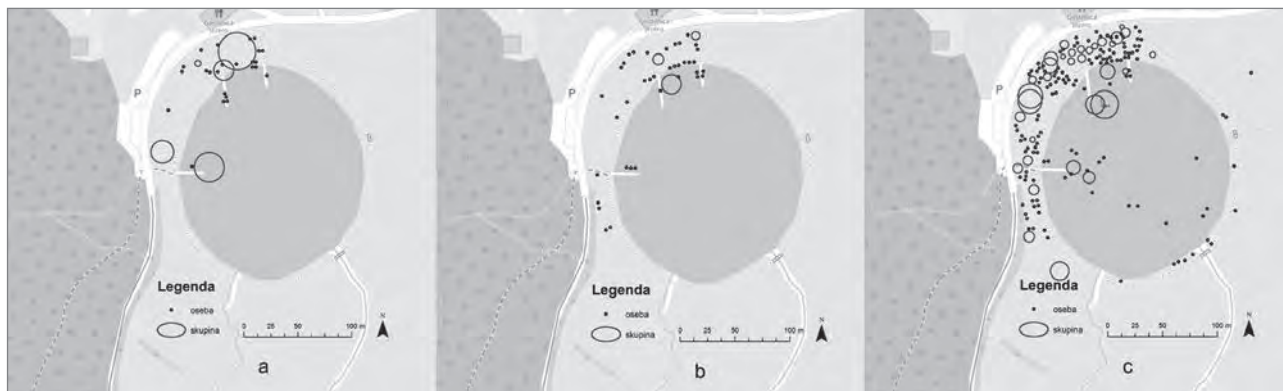
Največji obisk Jezera pri Podpeči je bil evidentiran v nedeljo, 17. 6. 2018, ko sta bila opazovanje in kartiranje vedenj opravljena popoldne (14.00 – 19.00) in v nedeljo, 19. 8. 2018, ko sta opazovanje in kartiranje vedenj potekala dopoldne (10.00 – 14.00). V obeh primerih je bilo v opazovanem obdobju na območju opazovanja približno 300 ljudi. Komentarji so za izbrane dni podani primerjalno z drugimi dnevi ali glede na intenziteto in značilnost obiska ob koncih tedna.

Kumulativni vedenjski zemljevid zasedbe prostora v vseh opazovalnih dneh prikaže lokacije uporabe prostora tako za posameznike (točkaste oznake) kot za skupine (poenostavitev prikaza z različno velikimi krogi). Kumulativni vedenjski zemljevid pokaže zasedbo prostora in prostorsko razporeditev rab v vseh opazovalnih dneh, na njegovi podlagi je razvidna obremenitev prostora glede na gostoto in intenziteto razmeščanja rab v prostoru. Nazorno pokaže, kateri deli prostora so bolj in kateri manj v rabi, in je izhodišče za nadaljnje analize o dejanskih rabah, njihovih intenzitetah, pogostosti, združljivosti ipd.

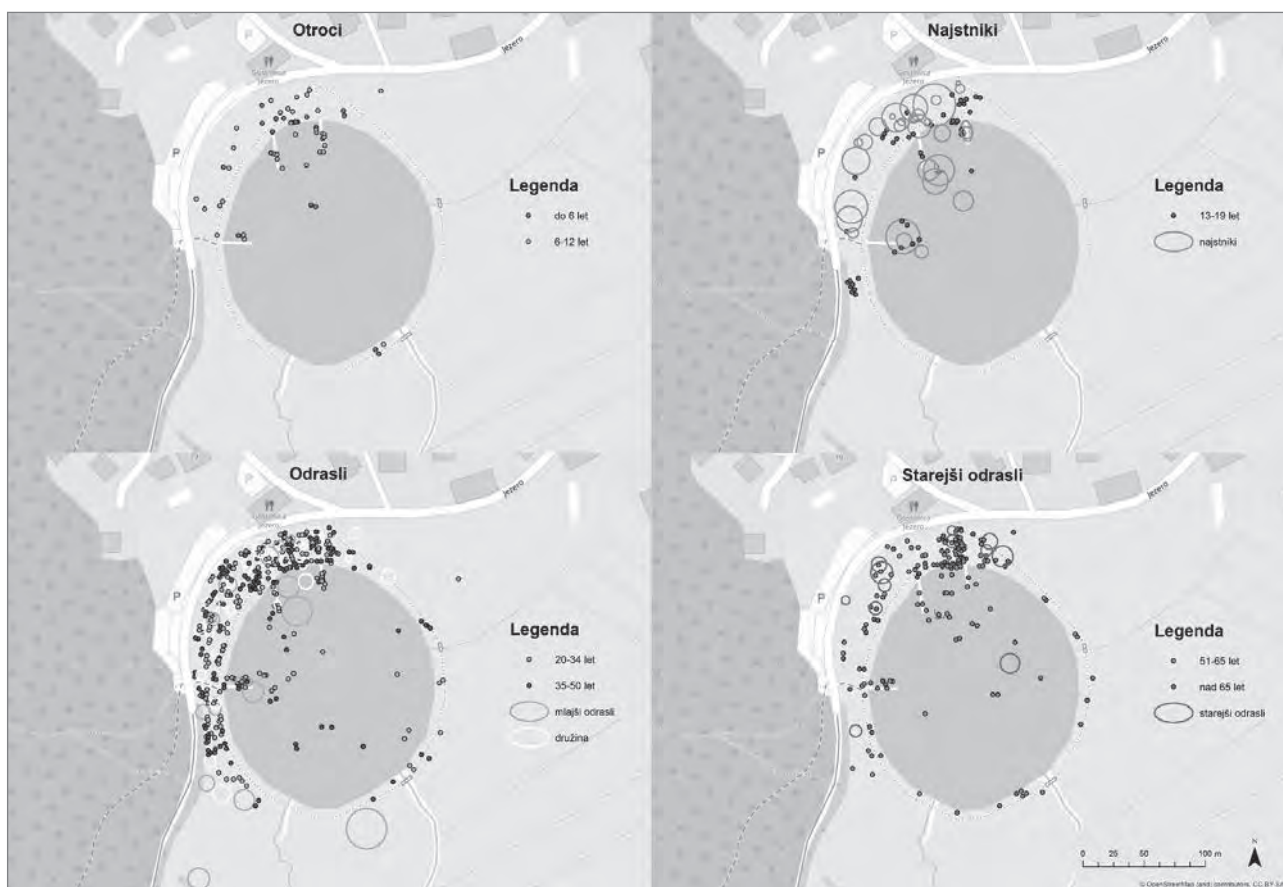
Podrobna analiza dejavnosti na Jezero pri Podpeči je pokazala, da največ obiskovalcev tako ob koncu tedna kot med tednom posega na zatravljenem robu jezera, da se ob koncu tedna poleg posedanja najpogosteje poležava na travi, med tednom pa so najpogostejši sprehodi. Podobno potrjuje analiza zasedbe prostora, kadar ne gre za posameznike ali pare, temveč se v prostoru pojavijo skupine (tri osebe ali več skupaj). Največ skupin je bilo opaženih pri posedanju, plavanju in hoji ali sprehodu. Primerjava med uporabo prostora ob koncih tedna in med tednom pokaže, da je pri vodnih dejavnostih ob koncu tedna izrazitejša plavanje, med tednom pa ribolov.

Poleg ugotavljanja kumulativnih učinkov obremenitev prostora je pomembno tudi prepoznavanje načina zapolnjevanja prostora. Značilnosti dnevnega zapolnjevanja prostora potrjuje prikaz zasedbe prostora v dneh, ko obiskovalcev ni veliko, saj je mogoče sklepati na značilnosti sekvenčne zasedbe prostora. Primerjava na sliki 6 ponazarja dni, ko je bil obisk velik (a – b), in dan, ko je bilo obiskovalcev veliko (c). Značilnosti in členitev prostora vplivajo na to, da so najprej zasedeni prostori ob pomolih in tisti, kjer je na voljo senca, potem se počasi polni prostor med pomoloma. Zasedba prostora na sliki c pokaže, da ko se prostor med pomoloma tako zapolni, da se uporabniki še ne počutijo neugodno, se postopoma polni zahodni rob jezera in nato še južni del (pretežno s kratkotrajnimi dejavnostmi).

Iz analiz je razvidno, da je Jezero pri Podpeči priljubljena točka obiskovalcev vseh starostnih skupin. Mladostniki prihajajo pretežno v večjih skupinah, njihovo druženje ostaja skupinska dejavnost tako na obali kot v vodi. Manjše skupine so družji-



Slika 6: Način zapolnjevanja prostora, prikazan na podlagi uporabe prostora v treh dneh: 15. 6. (a), 26. 6. (b) in 17. 6. 2018 (c) (izdelala: Nevenka Mihevc, vir: OpenStreetMap, terenski zajem podatkov)



Slika 7: Zasedba prostora glede na starost (izdelala: Nevenka Mihevc, vir: OpenStreetMap, terenski zajem podatkov)

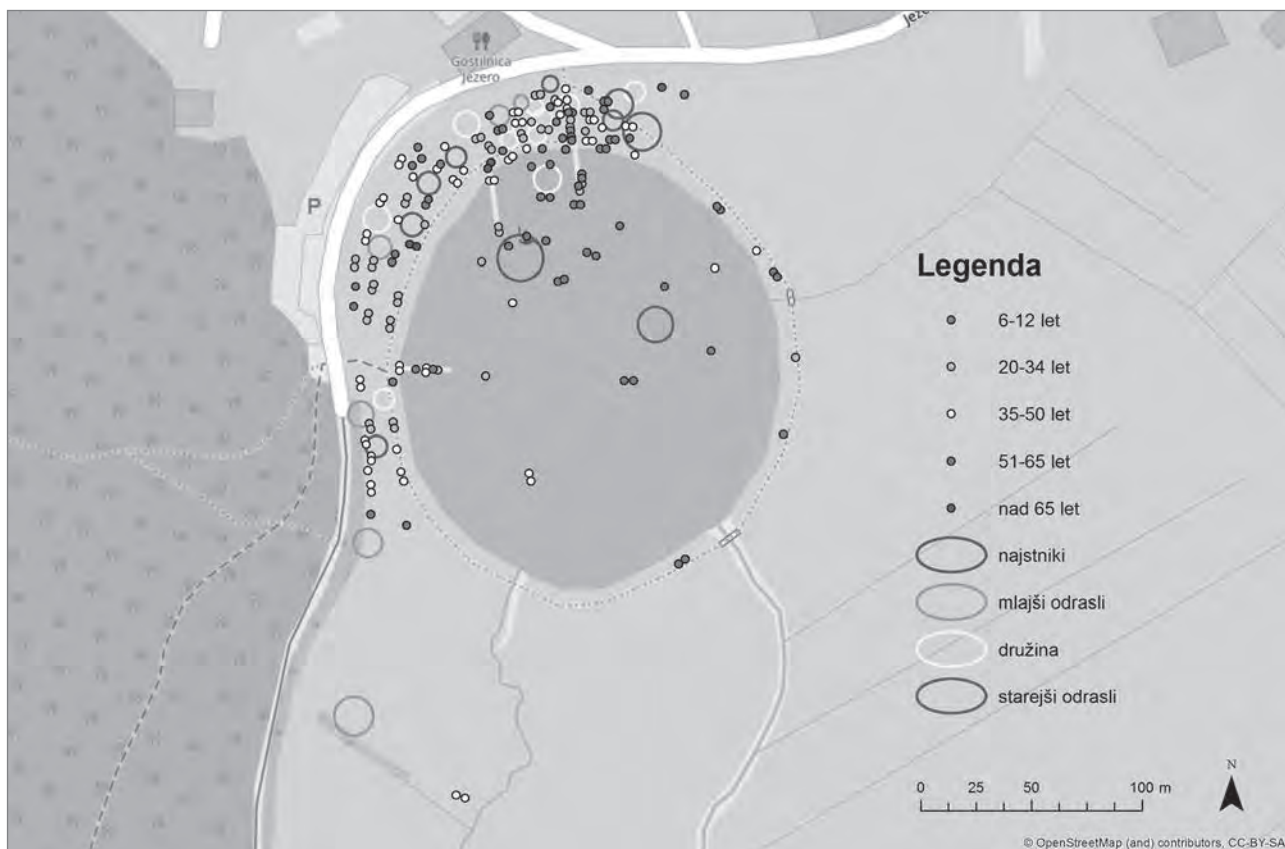
ne. Iz dodatne analize je razvidno, da se otroci, mlajši od šest let, navadno ne oddaljujejo od jedra, kjer je družina, in so v spremstvu odraslih. V manjših skupinah pogosto prihajajo mlajši odrasli (20–34 let) in družine. Starejši odrasli (51–65 let) prihajajo tudi v večjih skupinah. Zanimivo, iz analiz je razvidno, da ti na jezero pridejo intenzivno plavat. Starostniki, starejši od 65 let, so navadno sprehajalci.

Iz analize tipičnega dneva uporabe prostora jezera izhaja, da se družine in starejši odrasli zadržujejo pretežno na severni obali, v senci. Mlajši odrasli so posamično ali v skupinah enakomer-

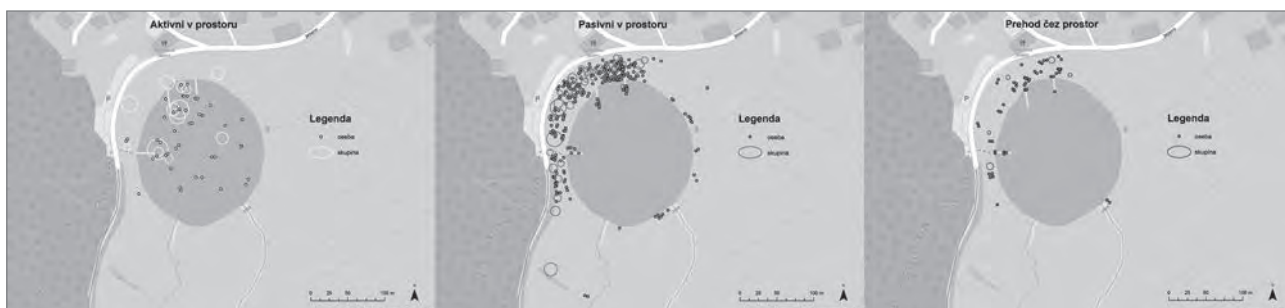
no razporejeni od senčnega območja do južnega dela zahodne obale jezera, za plavanje pa so najpogumnejši starejši odrasli. Rob z naravno zarastjo je v rabi za sprehod okoli jezera, za druge dejavnosti, pri katerih se posamezniki dlje zadržujejo na tem območju, pa se ne uporablja.

3.2 Vrsta dejavnosti

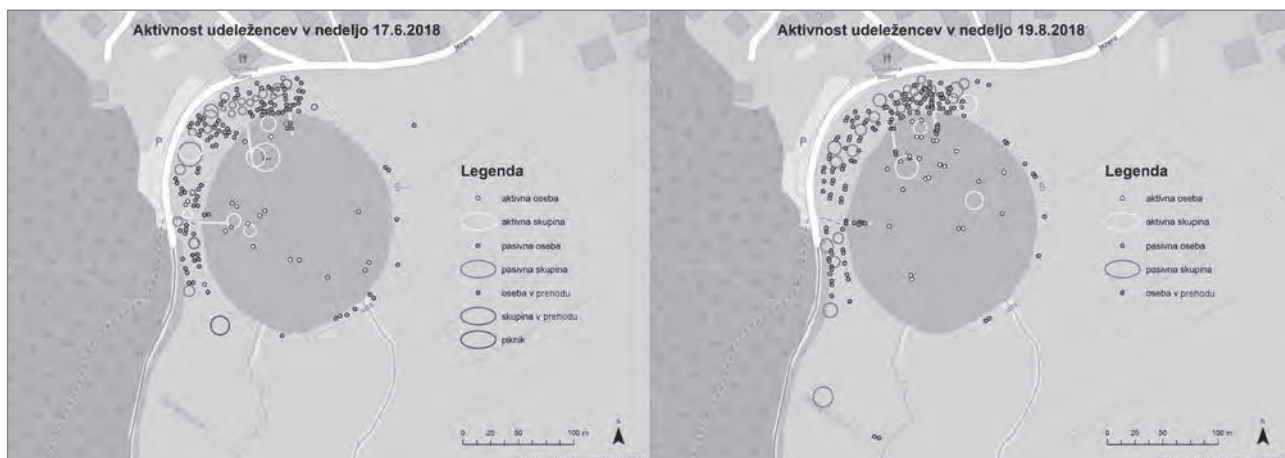
Na podlagi zbranih podatkov so sledile analize izvedenih podatkov. Prilagojeno po Goličnik (2007) so bile dejavnosti razvrščene v tri skupine: dejavne v prostoru (tj. biti aktiven



Slika 8: Primer zasedbe prostora za enega tipičnih dni, 19. 8. 2018 (izdelala: Nevenka Mihevc, vir: OpenStreetMap, terenski zajem podatkov)



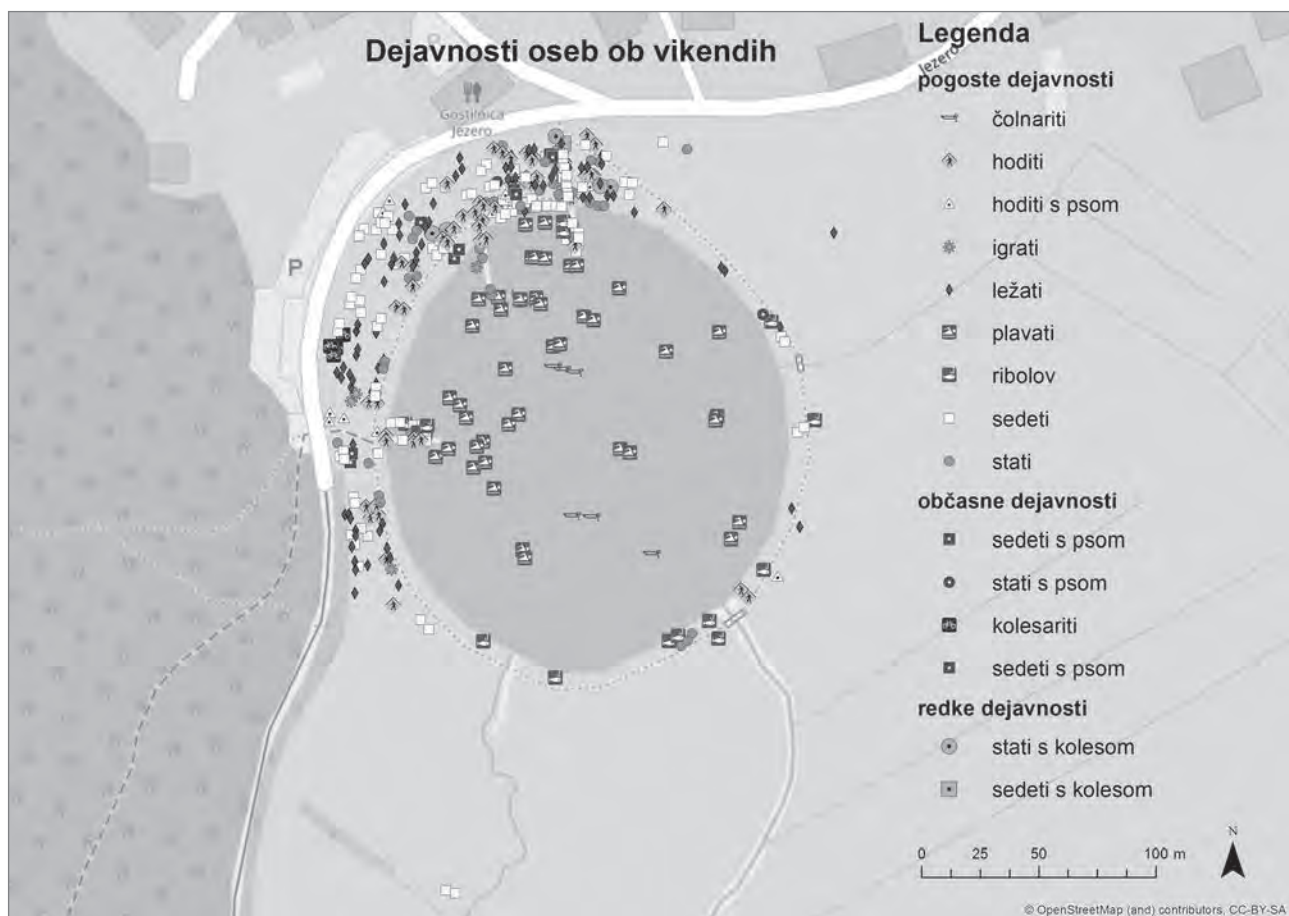
Slika 9: Primeri kumulativne zasedbe prostora glede na vrsto dejavnosti v primeru pogosto obiskanih dni (15. 6., 17. 6. in 19. 8. 2018) (izdelala: Nevenka Mihevc, vir: OpenStreetMap, terenski zajem podatkov)



Slika 10: Dnevni vedenjski vzorci zasedbe prostora glede na dejavnost udeležbe v nedeljo popoldne (17. 6. 2018) in nedeljo dopoldne (19. 8. 2018) (izdelala: Nevenka Mihevc, vir: OpenStreetMap, terenski zajem podatkov)



Slika 11: Pogostost pojavljanja uporabnikov ob podpeškem jezeru: a. posamezniki, b. skupine (izdelala: Nevenka Mihevc, vir: OpenStreetMap, terenski zajem podatkov)



Slika 12: Vrste dejavnosti glede na pogostost pojavljanja ob koncu tedna (izdelala: Nevenka Mihevc, vir: OpenStreetMap, terenski zajem podatkov)

v prostoru, na primer žogati se), pasivne v prostoru (tj. biti pasiven v prostoru, na primer ležati ali sedeti v travi) in tiste v prehodu čez prostor (tj. biti v prehodu čez prostor, na primer teči ali sprehajati se). Iz analiz je razvidno, da je dejavno preživljanje časa ob podpeškem jezeru v glavnem vezano na vodno okolje: plavanje in igre v vodi. Na bregu so v skupini

aktivnih v ves čas izvajanih dejavnostih izpostavljene nekatere skupine, ki so imele piknik, pri čemer so se prisotni vključevali v aktivne igre z žogo ali lovljenje (otroci). Za ponazoritev podajamo prikaz dnevnih vedenjskih vzorcev zasedbe prostora glede na dejavnost udeležbe v nedeljo, 17. 6. 2018, popoldne in nedeljo, 19. 8. 2018, dopoldne.

3.3 Pogostost izvajanja dejavnosti in intenziteta pritiska na prostor

Nadaljnje analize so bile osredotočene na pogostost izvajanja neke dejavnosti in na presojo intenzitete pritiska na prostor. Pogosto izvedene dejavnosti so tiste, ki so bile opažene v več kot 66 % opazovalnih dni, občasno izvedene so tiste, ki so se pojavile v 33 –66% opazovanj, in redko izvedene pa so tiste, ki so bile opažene v manj kot 33 % opazovanj. Iz analize je razvidno, da se pogosto izvajajo dejavnosti v vodi in med severnima pomoloma, ob zahodnem pomolu in na položni brežini zahodnega roba jezera. To območje je tako skoraj vedno v rabi, aktualno tako za pasivne kot aktivne dejavnosti. Na zemljevidu, ki prikazuje posameznike, je razvidno, da sta posedanje in ležanje na travi pogostejša bliže vodnemu robu (brežine med pomoli).

Iz osnovne analize zemljevidov je razvidno, kateri deli prostora so navadno zasedeni s pogosto izvedenimi dejavnostmi in kateri z redko izvedenimi, kar posledično kaže na to, za katere mikrolokacije lahko pričakujemo, da bodo bolj obremenjene od drugih. Primerjava zemljevidov pokaže še, da so ob dnevih, ko je obisk velik, navadno pojavljajo običajne, vedno pričakovane ali pogosto izvedene dejavnosti in da se ob dnevih, ko takšnega navala ni, pojavljajo tudi druge dejavnosti. Analiza pogostosti pojavljanja dejavnosti je pomembna zato, ker razkriva, da so v prostoru ne le pričakovane in običajne dejavnosti (tj. tiste, ki jih pričakujemo, ker se navadno pogosto izvajajo), ampak so lahko tudi dejavnosti, ki jih manj pričakujemo in jih nekdo izvaja. Analize lahko razkrijejo, katere dejavnosti so takšne in v kakšni relaciji so glede na pogoste dejavnosti. Še posebej je to pomembno pri primerjavah pojavljanja dejavnosti med tednom in ob koncu tedna, saj se pokaže, da je občasno ali redko izvedene dejavnosti bolj verjetno mogoče zaznati med tednom in da bolj verjetno zajemajo vključevanje lokalnega prebivalstva, in ne izletnikov ali obiskovalcev od daleč.

V tem kontekstu je podrobna analiza opazovalnih dni pokazala, da Jezero pri Podpeči ni nujno končna kolesarska destinacija, da pa se občasno rekreativni kolesarji tam ustavijo in nato nadaljujejo pot: med tednom so bili kolesarji opaženi redko, ob koncu tedna pa občasno. Analize so pokazale, da je Jezero pri Podpeči izrazita destinacija zadrževanja, tj. za dejavnosti, ki so bile opažene pogosto, je značilno, da se ves čas izvajajo v prostoru, in to kot pasivne, npr. sedenje /posedanje, ali aktivne, npr. plavanje. Posebna primerjava pogostosti izvajanja dejavnosti le glede na dejavnosti, ki so bile opažene ob koncu tedna, pokaže, da se tedaj značilno pojavljajo enake vrste dejavnosti, zato so mnoge pogoste.

4 Rezultati

V tem poglavju na podlagi predstavljenih analiz interpretiramo rezultate tako, da bi zasnovali koncept nosilne sposobnosti zavarovanih krajin za zasedbo in opredelili koncept zelene infrastrukture z vidika kulturnih ekosistemskih storitev, ki upoštevajo ranljivost naravnega prostora.

4.1 Nosilna sposobnost območja za rekreacijo

Na podlagi predstavljenih analiz smo opredelili splošno stopnjo presoje nosilne sposobnosti vrednega krajinskega območja za rekreacijo. Empirični rezultati so pokazali, da je na območju intenzivne rabe z dlje časa pogosto izvajanimi aktivnimi ali pasivnimi dejavnostmi mogoče ugotoviti, da ob dani obremenitvi povprečna površina kopnega dela na uporabnika znaša najmanj 30 m² ali, posplošeno, če bi se uporabniki enakomerno razporedili, bi na vsakega pripadlo območje kroga s polmerom vsaj 3 m. Podatki so pokazali, da se ob najbolj obiskanih dnevih dnevno na območju podpeškega jezera zadržuje približno 300 ljudi, ki so na območju prisotni vsaj nekaj ur. Območje, ki ga pri tem zasedejo (OZ), meri od 3.500 (upoštevano območje gostejše zasedbe) do 8.000 m² (območje z upoštevano robno razpršenostjo rab). Izračunani za dve območji se razlikujeta glede na porazdelitev uporabnikov na prostoru. Večje območje vključuje vse lokacije, ki so bile uporabljene kadar koli v celotnem opazovalnem obdobju (tj. najbolj razpršen vzorec kumulativne rabe prostora), območje gostejše uporabe pa se nanaša na območje, ki ga običajno zasedajo uporabniki, pri čemer so izključene prav tiste lokacije, ki se občasno ali zelo redko izberejo za uporabo, npr. sedenje ali ribolov (glej sliko 13).

Ocene so pokazale, da pri tem na posameznika pripada območje kroga (O) s polmerom 2 –3 m.

$$C = \frac{AU}{NU}; C = \pi r^2,$$

pri čemer je:

AU: celotno območje zasedbe,

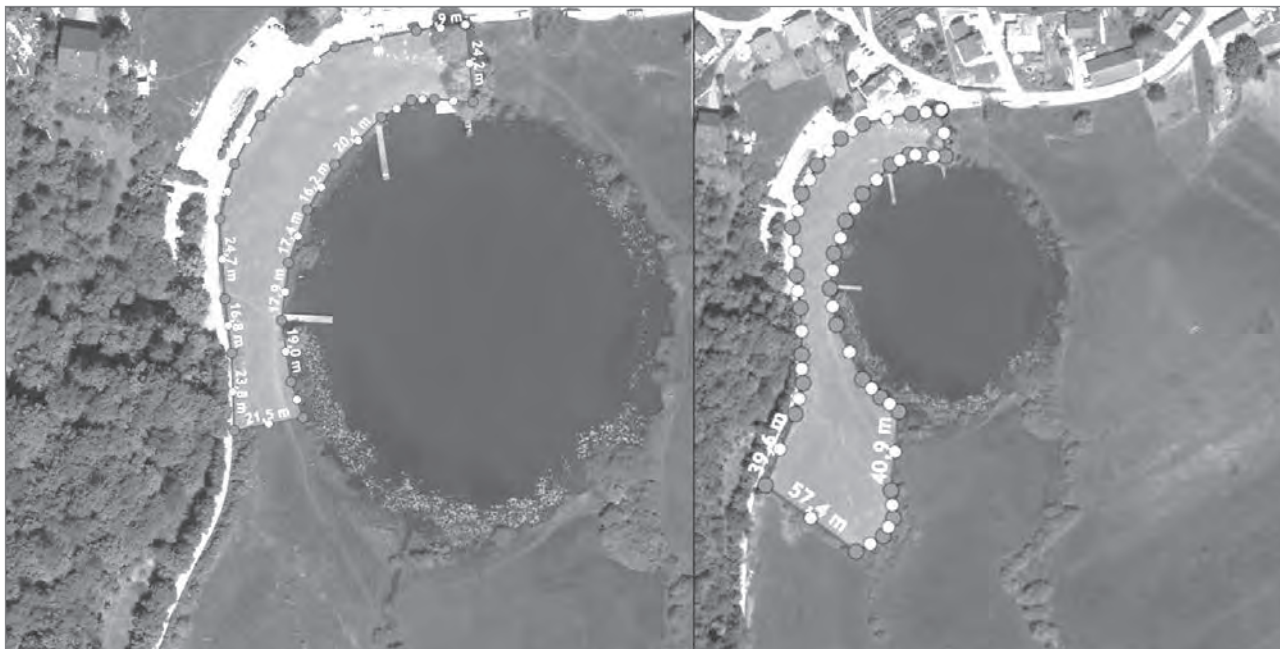
NU: število ljudi na celotnem območju zasedbe,

C: posplošena vrednost površine območja na posameznika,

r: polmer površine posplošene vrednosti območja na posameznika.

$$C1 = \frac{3.500 \text{ m}^2}{300} = 12 \text{ m}^2, C1 = 12 \text{ m}^2 = \pi r^2, r = \sqrt{\frac{01}{\pi}}, r = \sqrt{3,8} \sim 1,9 \text{ m}$$

$$C2 = \frac{8.000 \text{ m}^2}{300} = 26 \text{ m}^2, C2 = 26 \text{ m}^2 = \pi r^2, r = \sqrt{\frac{02}{\pi}}, r = \sqrt{8,2} \sim 2,8 \text{ m}$$



Slika 13: Ilustracija dveh območij, izbranih za izračun nosilne sposobnosti prostora (ilustracija: Nevenka Mihevc, vir: Agencija Republike Slovenije za okolje, Atlas kakovosti okolja)

4.2 Razprava

Pri trenutni razvojni stopnji koncepta nosilne sposobnosti območja za uporabo gre za okvirne ocene, a pomembno je, da se tovrstne teme začnejo obravnavati, da se oblikujejo predstave o dejanskih rabah in njihovih učinkih na prostor ter sposobnostih prostora za naravno regeneracijo. Za ponazoritev, za ustrezno presojo nosilne sposobnosti prostora za zasedbo z rabami za prosti čas, rekreacijo in sprostitev je poleg pogostosti pojavljanja posamezne dejavnosti pomembno tudi, kako intenzivna je, tj. koliko ljudi je hkrati vključenih v enako vrsto dejavnosti na območju opazovanja. Dejavnosti, ki so bile praviloma opažene v večjem številu ob koncu tedna, so sedeti ali posedati, ležati na travi in plavati. Navadno pogoste, vendar ne zelo intenzivne (malo ljudi) dejavnosti so bile ribolov, opazovanje ali postopanje ter hoja ali sprehod.

Zato so takšne presoje kljub vsemu lahko dober temelj za začetna izhodišča in iskanje odgovorov (ali novih vprašanj). Izračuni, kot je ponazorjeno zgoraj, so temelj za nadaljnje razmišljanje in snovanje akcijskih načrtov ali ukrepov za usmerjanje rekreativne in sprostitvene dejavnosti na območje. Pomagajo tudi ugotoviti, kako lahko pri novih lokacijah, na katere želimo usmeriti tovrstno rabo, predvidimo zmogljivosti in usmerimo dejavnosti nanje. Še več, pripomorejo lahko tudi k zasnovi preizkušanja in usmerjanja rekreativcev na sorodna območja ali doprinešajo k vzdržnemu upravljanju zavarovanih območij z vidika rekreacije in obiska. Na podlagi takih rezultatov je mogoče sklepati, pri kakšni obremenitvi se hkrati zagotavlja tudi ustrezna zasebnost v javnem prostoru (Hall, 1966). Na

primer abstraktni vplivni prostor (površina posplošene vrednosti območja na posameznika s polmerom 2–3 m), ki v okviru tega pilotnega primera pripada posamezniku, po okvirni oceni ustreza antropološkim dimenzijam (Hall, 1966) oddaljene družbene distance, ki po Hallu (1966) pomeni razdaljo med 2,1 in 3,7 metra.

Te prve ocene so predhodno izhodišče za nadaljnje raziskovanje potenciala koncepta nosilne sposobnosti prostora za zasedbo, ne le z vidika družbenih dimenzij prostora, temveč tudi z vidika naravovarstva in biotske raznovrstnosti. Rezultati pilotne študije so pokazali, da je južni del jezera zaradi svojih naravnih značilnosti manj privlačen za posedanje ali ležanje na travi. Zaraščenost, vodnatost, pomanjkanje sence in uhojene poti so le nekatere značilnosti, zaradi katerih se obiskovalci tam ne zadržujejo dlje. Omenjeni del opravlja pomembno ekološko funkcijo in funkcijo biotske raznovrstnosti, zato je s tega vidika smiselno poudariti, da je za nosilno zmogljivost širšega območja jezera smiselno ljudi še naprej zadrževati na enem koncu, da lahko ta južni del opravlja svojo naravno funkcijo in da v primeru pritiskov na prostor rešitve, ki bi iskale urejanje prostora za rabo na južnem delu, ne bi bile primerne.

5 Sklep

Na podlagi uveljavljene metode opazovanj in vedenjskih zemljevidov je članek osvetlil spoznanja o osnovnih značilnostih uporab prostora ob Jezeru pri Podpeči in podal komentarje glede na značilnosti razporeditev dejavnosti po prostoru z

vidika številnih parametrov: gostote zasedbe in načina polnjenja prostora, vrste in intenzitete dejavnosti, prisotnost uporabnikov glede na starostne skupine ipd. Kot glavni rezultat je uvedel koncept nosilne sposobnosti prostora za zasedbo kot novo količino za ugotavljanje preobremenjenosti prostora z rabo. Ob najrazličnejših pritiskih družbe na prostor je tudi z vidika (u)porabe prostora pomembno prepoznati priložnosti in omejitve prostorov, še posebej takšnih, ki so prepoznani kot vredne naravne ali kulturne krajine, saj so kot taki še toliko bolj privlačni za (upo)rabo. Na podlagi pilotnih preveritev je bil postavljen osnutek koncepta in izvedene so bile prve empirične meritve. Prve ocene nosilne sposobnosti prostora na podlagi posplošene površine območja na posameznika pomenijo le začetek. Več ko bo v prihodnje opravljenih podobnih opazovanj in analiz po predlaganem protokolu, z večjo gotovostjo bomo lahko dobili izboljšane mere stopenj nosilnih sposobnosti prostora za zasedbo. Treba bo večplastno obravnavati odnos med uporabo prostora, njegovo pojavnostjo in ekosistemskimi značilnostmi.

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Viri in literatura

ARSO (2019): Agencija Republike Slovenije za okolje, *Atlas okolja*. Dostopno na: http://gis.arso.gov.si/atlasokolja/profile.aspx?id=Atlas_Okolja_AXL@Arso (sneto 13. 6. 2019).

Chang, Q., Li, X., Huang, X. in Wu, J. (2011): A GIS-based green infrastructure planning for sustainable urban land use and spatial development.

Procedia Environmental Sciences, 12(2012), str. 491–498.
DOI: 10.1016/j.proenv.2012.01.308

Evropska komisija (2013): *Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) – Enhancing Europe's Natural Capital*. Dostopno na: http://eur-lex.europa.eu/resource.html?uri=cellar:d41348f2-01d5-4abe-b817-4c73e6f1b2df.0014.03/DOC_1&format=PDF (sneto 12. 2. 2018).

Evropska komisija (2016): *Supporting the implementation of green infrastructure*. Directorate-General for the Environment, ENV.B.2/SER/2014/0012. Dostopno na: http://ec.europa.eu/environment/nature/ecosystems/docs/green_infrastructures/GI%20Final%20Report.pdf (sneto 25. 4. 2018).

Evropska komisija (2018): *Mapping and assessment of ecosystems and their services: An analytical framework for mapping and assessment of ecosystem condition in EU*. Luxembourg: Publications Office of the European Union.

Gill, S. E., Handley, J. F., Ennos, A. R., in Pauleit, S. (2007): Adapting cities for climate change: The role of green infrastructure. *Built Environment*, 33(1), str. 115–133. DOI: 10.2148/benv.33.1.115

Goličnik, B. (2006): *Vedenjski zemljevidi ljubljanskih trgov in parkov: novi izzivi in pogledi na načrtovanje in urejanje prostora (= Urbani izziv: publikacije)*. Ljubljana, Urbanistični inštitut Republike Slovenije.

Goličnik, B., in Ward Thompson, C. (2002): Opazovanje in vedenjski zemljevidi: metoda raziskovanja javnega odprtega prostora v mestu. *Urbani izziv*, 13(1), str. 82–89. DOI: 10.5379/urbani-izziv-2002-13-01-011

Goličnik Marušič, B. (2015): Social behaviour as a basis for design and development of green infrastructure. *Urbani izziv*, 26, str. 130–149. DOI: 10.5379/urbani-izziv-en-2015-26-supplement-009

Goličnik Marušič, B., in Praper Gulič, S. (2018): Razvoj uporabniškega modula: prispevek k poplavno vzdržnemu prostorskemu načrtovanju. *Urbani izziv*, 19(2), str. 111–125. DOI: 10.5379/urbani-izziv-2018-29-02-004

Hall, E. T. (1966): *The hidden dimension*. New York, Bantam Doubleday Dell Publishing Group.

LOS_DAMA! (2018): *Green infrastructure for better living*. Dostopno na: https://www.alpine-space.eu/projects/los_dama/en/home (sneto 30. 5. 2019).

Meerow, S. in Newell, J. P. (2017): Spatial planning for multifunctional green infrastructure: Growing resilience in Detroit. *Landscape and Urban Planning*, 159, str. 62–75. DOI: 10.1016/j.landurbplan.2016.10.005

Openstreetmap Foundation (2018): *Openstreetmap*. Dostopno na: <https://www.openstreetmap.org> (sneto 12. 5. 2018).

Raymond, C. M., Berry, P., Breil, M., Nita, M. R., Kabisch, N., in de Bel, M. (2017): *An impact evaluation framework to support planning and evaluation of nature-based solutions projects. Report prepared by the EKLIPSE Expert Working Group on Nature-Based Solutions to Promote Climate Resilience in Urban Areas*. Wallingford, UK, Centre for Ecology & Hydrology.

Taylor, L., in Hochuli, D. F. (2017): Defining greenspace: Multiple uses across multiple disciplines. *Landscape and Urban Planning*, 158, str. 25–38. DOI: 10.1016/j.landurbplan.2016.09.024

Tzoulas, K., Korpela, K., Venn, S., Yli-Pelkonen, V., Kaźmierczak, A., Niemela, J., in James, P. (2007): Promoting ecosystem and human health in urban areas using green infrastructure: A literature review. *Landscape and Urban Planning*, 81, str. 167–178. DOI: 10.1016/j.landurbplan.2007.02.001

Ward Thompson, C. (2013): Activity, exercise and the planning and design of outdoor spaces. *Journal of Environmental Psychology*, 34, str. 79–96. DOI: 10.1016/j.jenvp.2013.01.003

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Sprejeto: 30. 10. 2019

Špela KRYŽANOWSKI

Primerjalna analiza med izbranimi priporočili fengšuiske šole oblike, jezikom vzorcev Alexandra in sodelavcev ter spoznanji okoljske psihologije

Feng šui je tradicionalna kitajska umetnost oblikovanja podpornega bivalnega okolja. Kljub številnim fengšuiskim znanstvenim prispevkom se jih zelo malo ukvarja s (primerjalnim ali eksperimentalnim) preverjanjem dejanske učinkovitosti fengšuiskih priporočil. Tudi arhitekturna stroka se do pojava nikoli ni jasno opredelila. Izvedena primerjalna analiza poskuša zato odgovoriti na raziskovalno vprašanje, ali je izbranih 118 priporočil fengšuiske šole oblike usklajenih s priporočili jezika vzorcev Alexandra in sodelavcev ter izbranimi spoznanji okoljske psihologije. Rezultati potrjujejo raziskovalnemu vprašanju in kažejo, da je 34 % (40 priporočil od 118) priporočil usklajenih z jezikom vzorcev in da je 45 % (53) v celoti ali delno usklajenih s spoznanji okoljske psihologije. Skupaj

je v okviru enega ali drugega sistema znanja skladna (posredno potrjena) dobra polovica (natančneje 57 % ali 67) priporočil, kar pomeni, da obstaja velika verjetnost, da ta priporočila dejansko imajo na uporabnike prostora vpliv, kot ga obljublajo. Dvojno skladnih je 27 priporočil (23 %), pri čemer se jih največ povezuje s fengšuisko shemo petih živali, pomenom prisotnosti vode in naravne svetlobe v bivalnem okolju ter pomenom glavnega vhoda. Največji del priporočil, ki ostane neprekritih, se povezuje s kitajskim konceptom življenjske energije *qi* (izg. čí).

Ključne besede: Feng šui, Alexandrov jezik vzorcev, okoljska psihologija, primerjalna analiza

1 Uvod

Feng šui¹ je tradicionalna kitajska umetnost oblikovanja okolja, ki naj bi uporabnika čim bolj podpiralo. Utemeljen je v tradicionalni kitajski filozofiji in tesno vpet v kitajski kulturno-zgodovinski okvir. Na Kitajskem in v drugih azijskih državah se prakticira že več tisočletij, na Zahodu pa ga bolje poznamo šele od konca 19. stoletja. Na prelomu tisočletja je doživel prvi veliki vrh priljubljenosti na Zahodu, pri čemer se arhitekturna stroka do njega nikoli ni jasno opredelila. Eden od razlogov za to so zagotovo ovire pri tovrstnem raziskovanju, ki so jim posebej izpostavljeni zahodni raziskovalci: raznovrstnost fengšuiskih šol, metod in tehnik, nepoznavanje kitajskega jezika in kulturnozgodovinskega okvira, subjektivnost tolmačenja priporočil in predvsem problem izolacije tovrstnih učinkov in posledično njihova znanstvena (ne)potrjenost. Na Zahodu je bil najprej predmet antropoloških raziskav (npr. De Groot, 1897; Needham, 1956; Freedman, 1968; March, 1968; Feuchtwang, 1974) kot ena od številnih tradicionalnih kitajskih tehnik prerokovanja, ki so v celotni kitajski zgodovini pomemben družbeni fenomen (Kubny, 2008). Tehnike so se sčasoma otresle privilegiranosti, zaradi katere so bile rezervirane za družbeni vrh, in so prešle v vsakodnevno rabo, za običajnega človeka (Bruun, 2003, 2008). Hkrati so se iz precejšnje pasivnosti, katere osnovni namen je izogibanje nesrečam, razvile v aktivno prakso, katere glavni namen je zagotavljanje sreče. Feng šui je tesno povezan s tradicionalno kitajsko filozofijo in kitajsko popularno religijo, ki zajema obsežno zbirko idej, praks, ritualov in obredov, povezanih z življenjskimi cikli, ki običajnega kitajskega kmeta povezujejo z lokalnim okoljem in družbo. Hkrati pa popularna religija posega tudi zunaj konkretnega materialnega sveta, v svet duhov, prednikov in lokalnih bogov, pri čemer feng šui najbolj opredeljujeta kulta čaščenja prednikov in čaščenja narave kot živega bitja.

Poleg sodobnega antropološkega (npr. Hwangbo, 1999; Bruun, 2003, 2008; Paton, 2013) sta njegovi najbolj zanimivi področji sodobnega proučevanja primerjava med feng šuiem in trajnostno gradnjo (npr. Yoon, 1980; Dan, 1994; Han, 2001; Xu, 2003; Chen in Nakama, 2004) ter proučevanje tradicionalnih (v skladu s priporočili feng šuia zgrajenih) objektov in urbanističnih ureditev (npr. Nemeth, 1987; Xu, 1998; Kalland, 1999; Thongkamsamut in Buranakarn, 2007; Chiang, 2009, navedeno v Mak in So, 2009; Mak, 2014; Gray, 2017). Prispevkov s področja sodobne arhitekture in urbanizma v povezavi s feng šuiem je manj, kot bi jih pričakovali glede na njegovo aktivno uporabo v azijskem svetu. Precej več je strokovnih priročnikov (npr. Bramble, 2003; Mak in So, 2009; Mak in So, 2011), v okviru katerih poskušajo arhitekti drugim arhitektom razložiti osnovna načela feng šuia. Hkrati se vsebine v znanstvenih prispevkih pod različ-

nimi naslovi ponavljajo. Ne glede na to je feng šui v azijskem svetu pomemben kulturni moment, katerega vplivu lahko sledimo prek prispevkov s področja ekonomije in nepremičnin (npr. Choy idr., 2007; Chang, 2009; So, 2009; Chang in Lii, 2010; Wu idr., 2012; Yau, 2012; Chen idr., 2015), turizma (npr. Hobson, 1994; Poulston, 2009; Poulston in Bennett, 2012) ter zdravilstva in zdravstva (npr. Whedon, 2000; Schumm, 2004; Sit, 2004; An, 2014).

Prispevkov, ki se osredotočajo na vrednotenje fengšuiskih priporočil in raziskujejo, ali ta priporočila dejansko delujejo ali pa so le del antropološke kulturne dediščine, je zelo malo. V pregledu svetovne znanstvene literature jih je mogoče zaslediti le 16. Razdelimo jih lahko na primerjalne študije in terenske eksperimentalne študije. V primerjalnih študijah učinkovitosti teh priporočil (predvsem tistih iz fengšuiske šole oblike) ne preverjajo neposredno s terensko raziskavo, ampak jih primerjajo s spoznanji na drugih področjih znanosti, predvsem z okoljsko psihologijo in aktualno arhitekturno prakso. Tudi v eksperimentalnih študijah se večinoma osredotočajo na raziskovanje učinkovitosti šole oblike in le v dveh primerih tudi na dele šole kompasa (Bazley idr., 2016 in Charles idr., 2017). Kar polovica terenskih študij se ukvarja s položajem zgradbe v širšem okolju (npr. Han in Amita, 1996; Lynch, 2003; Han, 2004; Mak idr., 2005 ali Um, 2009), polovica pa se osredotoča na interjer ali zasnovo objekta (npr. So in Lu, 2001; Mak idr., 2005; Poulston in Bennett, 2012; Octavia idr., 2014; Bazley idr., 2016; Charles idr., 2017; Hong idr., 2017; Mak, 2017). Nekatere študije poskušajo dokazovati verodostojnost teh priporočil na podlagi obstoječih sistemov vrednotenja (glej npr. Chang idr., 2009; Pheng idr., 2012). Za izvedeno primerjalno analizo pa sta zagotovo najzanimivejši primerjalni študiji Bonaiuta s sodelavci (2010) in Xuja (2004), v obeh primerih je v ospredju fengšuiska šola oblike.

V primerjalni raziskovalni študiji med izbranimi elementi okoljske psihologije in feng šuia je Bonaiuta s sodelavci (2010) najprej predstavil obe disciplini po njunih temeljnih značilnostih in področjih delovanja. Sledila je splošna primerjalna analiza med obema z ugotovitvami, da je veliko spoznanj okoljske psihologije vgrajenih v oblikovalska priporočila feng šuia. V nadaljevanju sta podrobno analizirani dve lastnosti prostora: restorativnost in kontrola. Restorativni elementi okolja zmanjšujejo psihično utrujenost in stres (npr. pogled na vodo, naravo). Kontrola izraža našo stopnjo moči nad okoljem, njeno pomanjkanje je pogosto povezano s stresom. Oba elementa sta v obeh disciplinah prepoznana kot zelo pomembni lastnosti okolja, ki podpirata dobro počutje. Avtorji so v študiji povzeli, da obstajajo stične točke med okoljsko psihologijo in feng šuiem. Pomanjkljivost študije je, da se pri predstavitvi feng šuia osredotoča le na koncepte šole oblike, šole kompasa pa niti ne omenja. V članku *Geomancy Theories and Behavior Psycho-*

logy (Xu, 2004) so analizirana teoretična izhodišča feng šuia in izvedena je primerjava s temeljnimi človekovimi potrebami vedenjske psihologije: te so preživetje, varnost, spolnost in razvoj. Avtorica ugotavlja, da bi morali arhitekti ključne ugotovitve fengšuiske teorije uporabljati pri ustvarjanju arhitekturnih rešitev.

Izhodišče za primerjalno analizo med izbranimi priporočili šole oblike, okoljske psihologije in jezikom vzorcev Alexandra in sodelavcev, ta analiza je predstavljena v nadaljevanju, je bilo izdelano v okviru magistrske naloge Feng shui, primerjalna študija izbranih tradicionalnih priporočil in sodobnih dognanj (Kryžanowski, 2012) na Fakulteti za arhitekturo Univerze v Ljubljani. Na podlagi rezultatov naj bi potrdili ali ovrgli naslednje raziskovalno vprašanje: Ali so izbrana priporočila fengshuijske šole oblike usklajena z dognanji izbranih poglavij okoljske psihologije in jezikom vzorcev, v smislu, da je njihov prostorski (oziroma oblikovalski) ali psihološki učinek na uporabnika enak?

2 Metode

Primerjalna analiza je izvedena po opisni znanstveni metodi (Kališnik in Lah, 1998), pri kateri kot raziskovalci ne vplivamo na proučevane pojave ali informacije, ampak jih le analiziramo. V prvem koraku je bila najprej oblikovana baza fengšuiskih priporočil, nato pa sta bili izvedeni dve primerjavi: najprej med izdelano bazo in jezikom vzorcev Alexandra in sodelavcev ter z dognanji okoljske psihologije.

2.1 Izdelava baze fengšuiskih priporočil šole oblike

Kot izhodišče za izdelavo baze tovrstnih priporočil se je upoštevala fengšuiska šola oblike. V feng šuiu delujeta dve pomembni šoli: šola oblike in šola kompasa. Prva je bolj intuitivna, druga pa bolj matematično modelirana. Temeljno izhodišče šole oblike je prisotnost življenjskega toka *qi* v krajini in temu primerno lociranje idealnega položaja novih objektov ali mest. Za ugodno postavitev je zelo pomembno upoštevanje modela petih živali (imenovanega tudi štirje emblemi) ali petih fengšuiskih geografskih skrivnosti (npr. v Mak, 2014). V sodobnih zahodnih interpretacijah feng šuia se je teža priporočil šole oblike od umestitve objekta v krajini preusmerila predvsem na priporočila v zvezi z notranjim oblikovanjem prostorov, pri čemer temeljna logika ostaja enaka. Šola kompasa je v primerjavi s šolo oblike bolj ponovljiva, njen glavni instrument pa je kompas, od tod tudi njeno ime. Kitajci so namreč že v 1. stoletju našega štetja vedeli, da magnetno polje vpliva na živa bitja (Kubny, 2008: 251). Nadaljnja logična izpeljava je bila, da magnetno polje vpliva tudi na človeka. Igla magnetita

naj bi bila sposobna po logiki enako privlači enako pokazati tok Zemljine *qi*, ker je bila namagnetena neposredno z Zemljino *qi*. Ta šola je tako na podlagi magnetizma (vplivi Zemlje) in položaja nebesnih teles (vplivi neba) razvila različne tehnike izračunavanja, kakšna naj bi bila kakovost *qi* na posameznih območjih prostora v odnosu do smeri neba in v posameznih obdobjih glede na vplive nebesnih teles.

Iz zgornjega obrisa obeh šol in poglobljene analize njunih priporočil je jasno, da je bilo za primerjalno analizo, ki feng šui primerja s priporočili sodobnih dognanj, mogoče upoštevati samo šolo oblike. Njena priporočila so v strukturi (ne pa nujno v vsebini) podobna priporočilom okoljske psihologije in jeziku vzorcev. Vsi trije sistemi opisujejo prostorske situacije in ugotavljajo, ali se ljudje v njih počutimo ugodno ali manj ugodno. Ob tem pa ni jasno, s čim bi lahko primerjali priporočila šole kompasa. V sodobni arhitekturi in urbanizmu (ali drugih področjih znanosti) ni sistema, ki bi deloval na enak ali vsaj približno soroden način. Torej, da bi stopnjo ugodja v prostoru ali ureditvi ocenjeval predvsem z vidika kompasne orientacije, leta nastanka zgradbe ali rojstnega datuma uporabnika. Šola kompasa bi bilo mogoče znanstveno ovrednotiti le z eksperimentalno metodo.

Prvi korak je bila torej izdelava baze priporočil šole oblike (2011) na podlagi študija relevantnih priročnikov o feng šuiu, informacij, prejetih v okviru izobraževanja (šolanje za fengšuiskega svetovalca), in lastnih (takrat 15 -letnih) izkušenj z izdelavami tovrstnih študij. Ne takrat ne danes ni bilo soglasja med priznanimi raziskovalci feng šuia, katere od številnih metod in tehnik dejansko spadajo v tradicionalni feng šui. O neki poenoteni tradicionalni bazi tega znanja je tako težko govoriti, pri čemer so se sčasoma razvile številne različice posameznih tehnik, ki niti niso vedno med seboj usklajene. Dodatna težava je, da so priporočila del tradicionalnega znanja in so v literaturi podana kot trditve, brez posebne znanstvene utemeljitve njihove učinkovitosti. Zato je izdelava te baze utemeljena na poglobljenem študiju literature, za izhodišče pa so uporabljena dela avtorjev, ki se opredeljujejo kot učitelji tradicionalnega feng šuia (v nasprotju s tako imenovanim novodobnim komercialnim feng šuikom življenjskih področij) in katerih priporočila so si enaka ali vsaj zelo podobna. V nabor izbranih avtorjev so bili uvrščeni Joseph Yu (Moran idr., 2005), Ewa Wong (1996, 2001), Derek Walters (Volters, 1998) in Evelin Lip (1979, 1986, 1994). Delno so vključena tudi priporočila T. Y. Lima (1997, 2000), vendar brez priporočil komercialnih fengšuiskih tehnik. Iz baze so izključena vsa priporočila, ki so vezana izključno na kitajski kulturnozgodovinski okvir (na primer uporaba kitajskih simbolov, okrasja ali ogledal), priporočila, ki nimajo neposrednega oblikovalskega učinka, in priporočila, ki jih ni mogoče povezati s filozofskimi izhodišči, na katerih je feng šui utemeljen. Tovrstnih priporočil je pri izbra-

nih avtorjih malo ali nič. Priporočila so za izdelavo omenjene baze najprej povzeta v obliki zveznega besedila (priročnika) in razdeljena na več poglavij (na primer: koncept *qi* v krajini, shema petih živali, priporočila za spalnico, kuhinjo, poslovni prostor itn.). Za potrebe primerjalne analize so priporočila šole oblike v naslednjem koraku povzeta v bazo 118 enostavnih trditvev in razdeljena v dva sklopa: krajina in okolica zgradbe ter zgradba in notranja oprema (del priporočil je predstavljen v preglednicah 1 in 2).

2.2 Izdelava baze po jeziku vzorcev Alexandra in sodelavcev

V drugem koraku so bila analizirana priporočila iz jezika vzorcev (Alexander idr., 1977). Alexander in soavtorji trdijo, da nekatere prostorske situacije življenje podpirajo, druge pa ne. Z vsakim od vzorcev opredelijo enega od problemov v okolju in predlagajo ustrezno rešitev. Vzorci prehajajo od regije, prek naselja, do okolice zgradbe, zgradbe, posameznih prostorov v zgradbi in na koncu konstrukcijskih gradbenih detajlov. Pri vsakem vzorcu je izčrpno opisan problem in navedene so možne primerjave z dognanji na drugih področjih znanosti. Vsak vzorec se konča z navodilom, kako v prostoru delovati, da bi bil problem, opredeljen v uvodu, odpravljen. Vseh 253 vzorcev skupaj deluje kot celota (en organizem), kar je za Alexandra in sodelavce ključno. Nekateri vzorci so si zelo podobni in se pojavljajo le v različnih merilih (na primer trg, dvorišče, dnevna soba).

Za potrebe primerjalne analize so bili primerjalno pregledani vsi vzorci, ki so jih opredelili Alexander in sodelavci, in vsa fengšuiska priporočila. Baza primerjave je bil seznam 118 fengšuiskih priporočil šole oblike. Temeljno izhodišče primerjave je bila ugotovitev, ali imata priporočili kot svoj rezultat enak ali zelo podoben učinek: v smislu urbanistične zasnove (npr. zaželen prisotnost naravne krajine ob objektih ali v njihovi neposredni bližini), v smislu oblikovanja posameznih elementov zgradbe (npr. zaželeno so okna v vsakem prostoru objekta) ali v smislu psihološkega učinka na uporabnika (npr. bližina vode ima pozitiven učinek na počutje ljudi). Če je bil učinek prepoznan kot enak ali podoben na način, da ga je bilo mogoče opisati s trditvijo, ki ustreza vsebinskemu bistvu obeh priporočil, mu je bila pripisana oznaka DA. Pri tem je bila stopnja skladnosti, ki jo opisuje oznaka DA, razvrščena v tri ravni. Če sta bili priporočili enaki na način, da sta uporabljali iste besede za iste pojme (npr. glavni vhod) in opisovali enako število parametrov (npr. jasno videno, osvetljeno), je bil uporabljen DA. Če je bilo bistvo obeh priporočil enako, uporabljen besednjak pa različen, je bil uporabljen (DA). Enaka oznaka (DA) je bila uporabljena tudi, kadar sta priporočili uporabljali isti besednjak, vendar je eno priporočilo zajemalo več parametrov, drugo priporočilo pa se je opredelilo le do nekaterih od teh

parametrov. Kadar je bil uporabljen besednjak različen in je mogoče skladnost ugotoviti le z logično izpeljavo in dedukcijo ali indukcijo, hkrati pa lahko eno priporočilo zajema več parametrov, drugo pa se opredeli le do dela teh parametrov, je bila uporabljena oznaka ((DA)). Na kratko: DA označuje visoko stopnjo skladnosti, (DA) delno skladnost, ((DA)) pa posredno skladnost. Če za priporočilo šole oblike med vzorci Alexandra in sodelavcev ni mogoče prepoznati nobenega glede učinka in vsebinskega bistva primerljivega priporočila, ostane polje za opredelitev stopnje skladnosti prazno. V nekaterih primerih se je pri primerjavi z jezikom vzorcev celo pokazalo, da ta priporočila prav obratno kot fengšuisko priporočilo. Teh primerov ni bilo veliko, v preglednici pa so označeni z oznako NE. Iz preglednice 1 so razvidne vse štiri zgoraj opisane stopnje (ne)usklajenosti skupaj z vsebinskim povzetkom, ki je skupen obema priporočiloma.

2.3 Izdelava baze po priporočilih okoljske psihologije

Dognanja okoljske psihologije so bila za potrebe primerjalne analize pregledno povzeta v vsebinsko sklenjenih poglavjih, npr. priporočila za oblikovanje doma, delovnega okolja, prodajaln ipd. Kot temelj sta se upoštevali deli, ki podajata (takrat) aktualne izsledke raziskav na področju okoljske psihologije: *Place Advantage* (Augustin, 2009) in njene splošne zakonitosti: *Environmental Psychology* (Bell idr., 2001). Po enaki metodologiji, kot je bila uporabljena v primerjavi z jezikom vzorcev Alexandra in sodelavcev, je bila tudi v tem primeru ob vsakem od 118 priporočil pripisana stopnja skladnosti: DA pomeni visoko skladnost, (DA) delno, ((DA)) pa posredno skladnost, prazno polje pa pomeni, da skladnost med fengšuisкими priporočili in spoznanji okoljske psihologije ni bila ugotovljena. Iz preglednice 2 so razvidne vse štiri zgoraj navedene stopnje (ne)usklajenosti skupaj z vsebinskim bistvom, ki je skupno obema priporočiloma.

3 Rezultati in razprava

3.1 Primerjava med izbranimi fengšuisкими priporočili in jezikom vzorcev Alexandra in sodelavcev

Analiza primerjave med 118 fengšuisкими priporočili šole oblike in jezikom vzorcev Alexandra in sodelavcev pokaže, da je za 21 priporočil mogoče najti vzorec, ki s priporočilom izkazuje visoko skladnost (oznaka DA), 14 priporočil je delno skladnih z omenjenim jezikom vzorcev (oznaka (DA)), 5 priporočil se je posredno skladnih (oznaka ((DA))). Skupaj je vsaj minimalno stopnjo skladnosti mogoče zaznati pri 40

Preglednica 1: Primeri priporočil šole oblike in njihova primerjava z jezikom vzorcev Alexandra in sodelavcev

Priporočilo fengšuiske šole oblike	Priporočilo ali del priporočila jezika vzorcev Alexandra in sodelavcev	Vsebinsko bistvo	Skladnost
3. Ugoden je tisti položaj lokacije objekta ali ureditve, ki upošteva (shemo petih živali): zaščiteno zaledje, delno zaščiteno levo in desno stran objekta ali položaja v prostoru in odprt prostor na naličju (brez objektov) z možnostjo razgleda.	96. (del) Višina zgradbe naj se ne razlikuje pomembno od sosednjih objektov.		
	106. (del) Vsi odprti prostori naj bodo oblikovani tako, da imajo vsaj delni občutek zaščiteneosti.		
	114. V odprtem prostoru ljudje vedno iščejo mesto, na katerem imajo zaščiteno zaledje in gledajo na večji odprti prostor.		
	115. (del) Notranje dvorišče naj ima pogled na večji odprti prostor.		
	124. (del) Življenje na javnem trgu se oblikuje ob robovih, ki omogočajo zaščito in zadrževanje.		
	125. (del) V odprtem prostoru z dogajanjem so za zadrževanje najbolj zanimiva tista območja, ki so nekoliko vzdignjena in omogočajo tako nadzor nad okolico kot vključitev v dogajanje.	Prostor naj bo oblikovan tako, da daje občutek vsaj delne zaščiteneosti in možnost pogleda (nadzora) na večji odprti prostor.	DA
	126. (del) Nekje v sredini večjega odprtega javnega prostora naj bo drevo, vodnjak ipd., ob katerem si ljudje lahko zaščitijo zaledje.		
	183. Pri dobrem delovnem mestu naj bo najmanj za hrbtom in na enem od bokov stena, sprednja stran pa naj se odpira v večji prostor.		
	185. (del) Prostor za sedenje naj bo zaščiten, brez poti, ki ga prečkajo, v približno polkrožni obliki.		
	193. Vsak prostor bi moral imeti ravnovesje med odprtostjo (pretočen prostor) in zaprtostjo (prostor celica).		
38. Skozi okna in vrata vstopa v objekt življenjska energija qi.	107. Ljudje so bolj pozitivni v zgradbah z okni kot v zgradbah brez oken. Svetloba ima ključno vlogo pri vzdrževanju cirkadianih telesnih ritmov.		
	128. Glavni bivalni prostori naj bodo obrnjeni proti jugu. Sonce v bivalnem prostoru je za bivalno kakovost izjemnega pomena.	Prisotnost oken v prostoru pozitivno vpliva na bivalno počutje.	(DA)
	192. Prostori brez razgleda (brez oken) negativno vplivajo na bivalno kakovost.		
62. Neugodni so ozki hodniki s slepimi zaključki.	132. Hodniki naj bodo kratki, prostorni in po možnosti osvetljeni.		
	132. Hodniki naj bodo prostorni, da je vanje mogoče namestiti tudi pohištvo in ustvariti občutek bivanja.	Hodniki naj bodo dovolj široki.	((DA))
2. Objekt postavimo na idealno mesto glede na tok življenjske energije qi v krajini.	104. Objekte moramo postaviti na najslabše točke v krajini, ne najboljše.	NE	
14. Cesta ali reka naj bo vedno na naličju, ne na zaledju objekta, ker dinamični energetski tok slabi zaledje.			

Vir: avtorica

Legenda skladnosti: DA: visoka skladnost, (DA): delna skladnost, ((DA)): posredna skladnost, NE: obraten učinek priporočila, Brez oznake: ni skladnosti

Preglednica 2: Primeri priporočil šole oblike in njihova primerjava s spoznanji okoljske psihologije

Priporočilo fengšuiske šole oblike	Priporočilo ali del priporočila iz okoljske psihologije	Vsebinsko bistvo	Skladnost
106. Idealno delovno mesto ima zaščitenozaledje, nadzor nad prostorom, možnost pogleda skozi okno in na vrata.	<p>Ko delajo, želijo imeti ljudje na delovnem mestu zaščiten hrbet (Augustin, 2009: 198), hkrati pa želijo imeti nadzor nad dostopom v prostor (Augustin, 2009: 29).</p> <p>Ljudje želijo imeti med sedenjem za hrbtom nekaj trdnega (steno ali trden paravan) (Augustin, 2009: 72). Zaradi predzgodovinskega spomina radi sedimo z zaščitenim hrbtom obrnjeni proti odprtemu prostoru (Augustin, 2009: 10, 85).</p> <p>Radi sedimo v prostorih, ki dajejo občutek zavetja z nižjim stropom in pogledom na večji odprti prostor (Hildebrandt, 1999, v Augustin, 2009: 11).</p> <p>Otroci in odrasli so bolj sproščeni in se lažje učijo, kadar so v prostoru, ki deluje zaščiten in ima po možnosti nekoliko nižji strop (Augustin, 2009: 228).</p> <p>Radi smo v prostorih, ki omogočajo nadzor nad dostopom v prostor (Augustin, 2009: 29).</p>	<p>Za sedenje so najboljša mesta z zaščitenim zaledjem in možnostjo pogleda v večji odprti prostor in z nadzorom nad dostopom.</p>	DA
1. Iz naravne krajine vstopa v objekt življenjska energija <i>qi</i> .	<p>Prisotnost naravne krajine in možnost pogleda na naravno krajino ob objektu pozitivno vpliva na bivalno kakovost. Spodbuja psihološko in fizično zdravje (Augustin, 2009: 234). In sicer omogoča:</p> <ul style="list-style-type: none"> – restorativni učinek (Kaplan, 1995, v Augustin, 2009: 31), – v predavalnicah zmanjšanje mentalne izčrpanosti in stresa (Augustin, 2009: 223), – v nakupovalnih središčih mentalno osvežitev (Augustin, 2009: 219), – višjo stopnjo zadovoljstva s službo (Edwards, 2008, v Augustin, 2009: 186), – pozitiven vpliv na bivalno počutje doma in v službi (Kaplan, 1993, 2001, v Augustin, 2009: 186), – v bolnišničnih okoljih blažitev stresa in ponovno vzpostavitev višje stopnje mentalne energije (Ulrich, 1984; Ulrich idr., 1991, v Augustin, 2009: 231), – prisotnost rastlin na splošno izboljšanje počutja in učinkovitosti (Augustin, 2009: 34). 	<p>Bližina naravnih zelenih površin (možnost pogleda na zelene površine) ugodno vpliva na bivalno kakovost v zgradbah.</p>	(DA)
28. Neugodna je zgradba v bližini bolnišnice, pokopališča, klavnice in drugih mest, povezanih z boleznijo, mučenjem ali smrtjo.	<p>Ljudi privlačijo mesta, ki obljublajo udobnost, varnost in občutek cenjenosti (Augustin, 2009: 14).</p>	<p>Ljudi ne privlačijo mesta, povezana z boleznijo, mučenjem ali smrtjo.</p>	((DA))
25. Na nagnjenem terenu naj bo vhod v zgradbo s spodnje strani.			

Vir: avtorica

Legenda skladnosti: DA: visoka skladnost, (DA): delna skladnost, ((DA)): posredna skladnost, Brez oznake: ni skladnosti

priporočilih ali 34 % vseh fengšuiskih priporočil. Pri tem niso upoštevana priporočila, pri katerih vzorec obravnava isto ali podobno vsebino, a je njegov prostorski učinek prav nasproten od fengšuiskega priporočila (npr. glej priporočilo št. 2 v preglednici 1). Skupaj je takih priporočil 5 (4 %). Dve od njih sta pogojno neskladni z vzorcem št. 116 v zvezi s potrebo po kaskadno strukturiranih strehah. Feng šui namreč ni naklonjen ostrim robovom streh, ki lahko merijo na bivalne prostore in jih je v primeru zelo strukturirane strehe v več ravneh ustrezno več. V strukturi treh pozitivnih stopenj skladnosti izstopa, da

se največ priporočil povezuje z visoko stopnjo skladnosti, pri čemer je poleg istega prostorskega učinka uporabljen tudi isti besednjak. Drugi največji je delež posredne skladnosti z istim vsebinskim bistvom in prostorskim učinkom, a različnim besednjakom. To je na neki način pričakovano. Tako obravnavana priporočila kot omenjeni vzorci obravnavajo konkretne prostorske situacije v urbanem okolju ali objektu, zato večinoma tudi uporabljajo isto izrazje (npr. pomen prisotnosti vode v zunanjih ureditvah ali pomen in dobra oblikovanost glavnega vhoda).

Preglednica 3: Primerjava med posameznimi fengšuiskimi temami in vzorci Alexandra in sodelavcev

Teme fengšuiskih priporočil	Zaporedne številke vzorcev	Delež (od 40*)
Shema petih živali	90, 96, 105, 106, 114, 115, 124, 125, 126, 183, 185, 193	30 %
Naravna osvetlitev, pomen okna	107, 128, 192, 194	10 %
Pomen vode	25, 64, 71	7,5 %
Glavni vhod in vhodna veža	110, 112, 130	7,5 %
Zelene površine in naravna krajina	3, 60	5 %
Ceste in križišča	49, 50	5 %
Ostri vogali in robovi	116, 191	5 %
Postelja	187, 188	5 %
Pravilne oblike, red, simetrija	99	2,5 %
Idealna lokacija	104	2,5 %
Garaža	113	2,5 %
Strehe	117	2,5 %
Prazni center	129	2,5 %
Hodniki	132	2,5 %
Stopnice	133	2,5 %
Kopalnica	144	2,5 %
Delovno mesto	183	2,5 %
Kuhinja	184	2,5 %

Vir: Kryžanowski (2012: 175)

Opomba: * Delež, ki ga posamezna fengšuiska tema zajema glede na število vzorcev Alexandra in sodelavcev, ki to temo prekrivajo.

Natančnejši pregled fengšuiskih priporočil, ki se skladajo posredno, delno ali zelo, pokaže (glej preglednico 3), da jih je daleč največ povezanih z modelom petih živali (12 priporočil ali 30 %), sledita pomen naravne osvetlitve in okna v prostoru (4 priporočila ali 10 %) ter pomen vode in glavnega vhoda (vsak od obeh ima po 3 priporočila ali 7,5 %), 5 % vzorcev (po 2 vzorca skupaj) se jih navezuje na zelene površine, ceste in križišča, ostre robove in vogale ter pomen postelje. Vsi preostali vzorci (po 2,5 %) se povezujejo s samo enim fengšuiskim priporočilom.

Zanimalo nas je tudi, kolikšen delež od vseh 253 vzorcev Alexandra in sodelavcev se sploh prekrije z izbranimi 118 fengšuiskimi priporočili šole oblike. 40 v različnih stopnjah skladnih priporočil predstavlja 16 % (od skupaj 253) vseh vzorcev. Dodatnih 5 priporočil (2 %) se z omenjenimi vzorci resda prekrije, vendar je učinek priporočila obraten. Glede na celotno število vzorcev je stopnja prekrivanja nizka. Eden od razlogov za to je, da imajo omenjeni vzorci izjemno širok spekter, ki gre od regije (40 % vzorcev), prek zgradbe (40 %) do konstrukcije (20 %). Pri izbranih priporočilih jih večina (77 %) obravnava zgradbo in njeno notranjo ureditev, na regijo in konstrukcijo oziroma gradbene detajle pa odpade le preostalih 33 %. Glede na raziskovalno vprašanje se odgovor na podlagi prvega dela primerjalne analize glasi: Od 118 fengšuiskih priporočil šole

oblike jih je 40 (34 %) posredno, delno ali visoko usklajenih s priporočili jezika vzorcev Alexandra in sodelavcev.

3.2 Primerjava med izbranimi fengšuiskimi priporočili in spoznanji okoljske psihologije

Analiza primerjave med 118 fengšuiskimi priporočili šole oblike in spoznanji okoljske psihologije pokaže, da je za 12 priporočil mogoče najti spoznanja okoljske psihologije, ki so visoko skladna (oznaka DA), 18 priporočil je delno skladnih z okoljsko psihologijo (oznaka (DA)), kar 23 priporočil pa je posredno skladnih (oznaka ((DA))). Skupaj je vsaj minimalno stopnjo skladnosti mogoče opredeliti pri 53 priporočilih ali 45 % vseh teh priporočil. V nasprotju z jezikom vzorcev Alexandra in sodelavcev je največji delež posredne in delne skladnosti. To je mogoče pojasniti z dejstvom, da so v nasprotju z jezikom vzorcev spoznanja okoljske psihologije (v obravnavanih virih) predstavljena predvsem s splošnimi pravili, ki pojasnjujejo naše odzive na izbrane prostorske elemente ali ureditve. Na podlagi posameznih primerov so pojasnjeni tudi odzivi na konkretne situacije, vendar manj podrobno kot v jeziku vzorcev Alexandra in sodelavcev ali pri feng šui.

Podrobna analiza vseh skladnih ter delno in posredno skladnih fengšuiskih priporočil pokaže (glej preglednico 4), da jih

Preglednica 4: Primerjava med posameznimi temami okoljske psihologije in deležem fengšuiskih priporočil, ki se s temi temami povezujejo

Teme okoljske psihologije	Povezava s fengšuisкими priporočili	Delež (od 53)
Potreba po zavetju (varnosti) in nadzoru (pogled v večji odprti prostor), nadzor nad dostopom v prostor in vpliv prazgodovinskega spomina na odzive na prostor	3, 41, 42, 65, 78, 83, 86, 91, 94, 106, 107, 108, 109, 110, 111, 113, 114	17 -krat, 32 %
Psihološka (ne)privlačnost ureditev (nebesedna komunikacija in prvi vtis)	28, 30, 31, 36, 40, 44, 45, 67, 68, 77, 92, 102, 105	13 -krat, 24 %
Vpliv form, vzorcev (ostrih, agresivnih, pravilnih, simetrija, stabilnost) in barv	26, 27, 35, 37, 46, 63, 71, 72, 73, 74	10 -krat, 19 %
Naravna svetloba (prisotnost in položaj okna, odblesk)	32, 38, 95, 98, 112,	5 -krat, 9,5 %
Vodni elementi	15, 17, 34, 43, 99	5 -krat, 9,5 %
Pogled na naravo (predvsem restorativni učinek)	1, 11	2 -krat, 4 %
Vpliv vetra	5	1 -krat, 2 %

Vir: avtorica

je kar 32 % povezanih z našo potrebo po zavetju in nadzoru oziroma s shemo petih živali, kot jo imenuje šola oblike. Zelo veliko priporočil je povezanih tudi z nebesedno komunikacijo prostora oziroma s psihološko (ne)privlačnostjo ureditev (24 %). Pri večini teh priporočil gre za posredno skladnost (pri 9 od 13). Sledi vpliv form, vzorcev in barv (19 %), pri čemer izstopa v feng šuiu poudarjeni negativni vpliv ostrih in agresivnih form. Tega zaznava in potrjuje tudi okoljska psihologija, vendar ga ne izpostavlja posebej. Preostala priporočila so vezana na vpliv naravnih elementov (svetlobe, vode, narave in vetra) in skupaj obsegajo preostalo četrtno vseh priporočil. Natančnejši pregled deležev, ki se povezujejo s temami okoljske psihologije, je naveden v preglednici 4.

Glede na raziskovalno vprašanje se odgovor na podlagi primerjalne analize med fengšuisko šolo oblike in okoljsko psihologijo glasi: Od 118 fengšuiskih priporočil šole oblike jih je 53 (45 %) posredno, delno ali visoko usklajenih s spoznanji okoljske psihologije.

To pomeni, da bi na podlagi spoznanj okoljske psihologije lahko sklepali, da ima dobrih 45 % v tem prispevku predstavljenih fengšuiskih priporočil šole oblike dejanske pozitivne učinke na bivanje v prostoru. Za analizo učinkovitosti preostalih 55 % bi bilo treba izvesti enako strogo nadzorovane študije, kot jih narekujejo raziskovalni protokoli okoljske psihologije. Zanimivo bi bilo tudi pogledati, kolikšen delež spoznanj okoljske psihologije kot celote izbrana fengšuiska priporočila dejansko pokrivajo. Vplivno območje okoljske psihologije je namreč precej širše kot le področje ugodnega bivanja, zato uporabljena metoda za ta namen ni primerna. Vsekakor je mogoče sklepati, da šola oblike kot celota pokriva le majhen del področja, s katerim se ukvarja okoljska psihologija, čeprav je priporočila

šole oblike mogoče uporabiti na vseh ravneh, od urbanizma do interjerja.

4 Sklep

Na podlagi rezultatov primerjalne analize je odgovor na zastavljeno raziskovalno vprašanje v obeh primerih pritrden. Kombinirana primerjava skladnih priporočil (vseh treh tipov) po eni in drugi primerjalni analizi dodatno pokaže, da vzorci Alexandra in sodelavcev in spoznanja okoljske psihologije ne prekrijejo istih fengšuiskih priporočil. Kot celota se tako prekriva 67 od vseh 118 priporočil ali dobra polovica (57 %). Od teh se jih dvojno prekriva 27 (ali 40 % od 67), pri čemer so upoštevane vsi tri ravni skladnosti. To pomeni, da so rezultat vseh treh sistemov (feng šui, jezik vzorcev in okoljska psihologija) iste ugotovitve ali prostorska priporočila. Enojno je prekritih preostalih 40 priporočil (ali 60 % od 67) kar pomeni, da tem priporočilom pritrjujeta ali jezik vzorcev ali spoznanja okoljske psihologije. Za dobro polovico od izbranih 118 priporočil lahko torej s posrednim utemeljevanjem ugotovimo, da obstaja velika verjetnost, da ta priporočila dejansko imajo na uporabnike vpliv, kot ga obljublajo.

Od dvojno prekritih priporočil jih je slabo polovico (12) mogoče povezati s fengšuisko shemo petih živali. Kot kaže, je ta tradicionalni kitajski model prepoznal enega gonilnih dejavnikov za dobro počutje človeka v prostoru. Shemo petih živali je mogoče navezati tudi na idealno stanje stvari na nebu *tian*, saj model izhaja iz kozmologije (Field, 2006) in simbolizira ozvezdja. Abstraktni astrološki diagram je v feng šuiu preobražen v praktični prostorski model, uporaben tako v urbanizmu in arhitekturi kot v interjerju. Od naravnih elementov so za

dobro počutje zelo pomembni naravna krajina, naravna svetloba in voda. Voda naj bi bo prepričanju feng šuia akumulirala *qi*. Njen izjemni pomen za človekovo dobro počutje v prostoru pa v svojih priporočilih izpostavljata tudi okoljska psihologija in teorija Alexandra in sodelavcev. Od arhitekturnih elementov stavbe ima glavni vhod zagotovo posebno mesto. Je točka prehoda med zunaj in znotraj, praviloma je glavna orientacijska točka na fasadi in prva stvar, s katero se srečamo v neposrednem stiku z objektom. Njegov izjemni pomen na subjektivno doživljanje zgradbe je zato poudarjen v vseh treh sklopih znanja. Povzamemo lahko, da gre pri skladnih fengšuiskih priporočilih predvsem za temeljna pravila oblikovanja in obnašanja v prostoru, pogojena z našimi osnovnimi psihološkimi odzivi na prostorske ureditve, ki so jih (in jih vedno znova) prepoznavale vse kulture in tradicije ter jih skladno z aktualnim stanjem tehnike in potrebami vnesle v urbanistično in arhitekturno oblikovanje.

Fengšuiska priporočila, ki ostanejo brez reference, lahko razvrstimo v dve kategoriji. Prva se nanaša na življenjsko energijo *qi* in njeno obnašanje v prostoru, druga pa je spoj več priporočil, ki jih ni mogoče poenotiti v eno oznako. Koncept življenjske sile *qi* po pričakovanju ni kategorija, na katero bi se nanašal kateri koli od sklopov obravnavanega sodobnega znanja, zato skladnosti niti ni bilo pričakovati. Ob tem je treba poudariti potrebo, da bi se učinkovitost teh priporočil intenzivneje raziskovala ter da bi se razvijali modeli, ki bi omogočali objektivno vrednotenje tako šole oblike kot šole kompasa (kot na primer v Kryžanowski, v tisku). Od tovrstnega znanstvenega raziskovanja feng šuia bi imela oba, tako sodobna znanost kot feng šui, lahko samo koristi. Tako bi se lahko ta zanimivi tradicionalni sistem znanja prečistil in se začel premikati iz območja tako imenovane psevdoznanosti v polje znanosti. Hkrati bi bilo mogoče preverjena fengšuiska priporočila nadzorovano vključiti v koncepte sodobne projektantske prakse. Ne nazadnje že izvedena primerjalna analiza pokaže, da dobra polovica priporočil, ki smo jih obravnavali, trdi ali priporoča isto kot okoljska psihologija ali jezik vzorcev Alexandra in sodelavcev. Če bi razvili modele za učinkovito preverjanje tistega dela feng šuia, ki obravnava koncepte, ki jih sodobna projektantska praksa ne pozna, bi lahko le ugotavljanje podobnosti med obema nadgradili s konstruktivnim dopolnjevanjem.

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Opombe

¹ Uradni kitajski latinični zapis v pinjinu je *feng shui* in se pravilno izgovarja [fəŋʂueɪ]. Slovenski pravopis v Pravilih 2011 določa, da besede iz nelatiničnih pisav prenašamo v slovenščino po načelih za zapisovanje slovenskih glasov (§ 1118). V Franu tako zasledimo zapis *féng shuí* (SSKJ²), ki ni ustrezen iz dveh razlogov. Prvič, ta zapis ne izraža ustrezne glasovne podobe, saj kitajski končaj -ui v okviru slovenskih glasov izgovarjamo kot /wei/ (Golob in Petrovič, 2018: 73). Drugi razlog je izguba sledljivosti informacij, ki je posledica slovenjenja kitajskih izrazov, zaradi česar se ti izrazi razlikujejo od zapisov v mednarodnem okolju, kjer se uporablja pinjinski zapis. Izguba referenčnosti je za vse raziskovalce *feng shuija* dodatna nepotrebna omejitev in breme.

Viri in literatura

- Alexander, C., Ishikawa, S., Silverstein, M., Jacobson, M., Fiksdahl - King, I., in Angel, S. (1977): *A pattern language*. New York, Oxford University Press.
- An, S. (2014): A case study on hospital interior colour design reflecting feng shui. *Journal of the Korean society of colloid science*, 28(3), str. 8192 (v korejščini). DOI: 10.17289/jksccs.28.3.201408.80
- Augustin, S. (2009): *Place advantage*. Hoboken, Wiley & Sons.
- Bazley, C., Vink, P., Montgomery, J., in Hedge, A. (2016): Interior effects on comfort in healthcare waiting areas, *Work*, 54(4), str. 791806. DOI: 10.3233/wor-162347
- Bell, A. B., Green, T. C., Fisher, J. D., in Baum, A. (2001): *Environmental psychology*. Mahwah, Lawrence Erlbaum associates.
- Bonaiuto, M., Bilotta, E., in Stolfa, A. (2010): Feng shui and environmental psychology: A critical comparison. *Journal of architectural and planning research*, 27(1), str. 2334.
- Bramble, C. (2003): *Architect's guide to feng shui*. Oxford, Architectural press.
- Bruun, O. (2003): *Feng shui in China: geomantic divination between state orthodoxy and popular religion*. Honolulu, University of Hawai Press.
- Bruun, O. (2008): *An introduction to feng shui*. Cambridge, Cambridge University Press.
- Chang, W. L. (2009): Using feng shui to create a positive corporate reputation. *Corporate reputation review*, 12(1), str. 43–51. DOI: 10.1057/crr.2009.2
- Chang, W. L., in Lii, P. (2010): Feng shui and its role in corporate image and reputation: a review from business and cultural perspectives. *Journal of architecture and planning research*, 27(1), str. 1–13.
- Chang, P. T., Lee, J. H., Hung, K. C., Tsai, J. T., in Perng, C. (2009): Applying fuzzy weighted average approach to evaluate office layouts with feng shui consideration. *Mathematical and computer modelling*, 50, str. 1514–1537. DOI: 10.1016/j.mcm.2008.07.038

- Charles, R., Glover, S., Bauchmueller, K., in Wood, D. (2017): Feng shui and emotional response in the critical care environment (FARCE) study. *Anaesthesia*, 72, str. 1528–1531. DOI: 10.1111/anae.14105
- Chen, B. X., in Nakama, Y. (2004): *A summary of research history on Chinese feng-shui and application of feng-shui principles to environmental issues*. Dostopno na: http://ffpsc.agr.kyushu-u.ac.jp/jfs-q/kyushu_forest_research/57/57po013.PDF (sneto: 25. 11. 2019).
- Chen, K. H., Chang, W. L., Chih, I. L., in Liao, C. N. (2015): Framing the decision making model of the Chinese business with feng shui concept. *Human systems management*, 34, str. 225–232. DOI: 10.3233/hsm-150840
- Chiang, M. (2009): Feng shui design and planning of Ming and Qing city of Beijing. V: Mak, M. Y., in So, A. T. (ur.): *Research in scientific feng shui and the built environment*, str. 137150. Hongkong, City university of Hong Kong press.
- Choy, L. H. T., Mak, S. W. K., in Ho, W. K. O. (2007): Modeling Hong Kong real estate prices. *Journal of housing and the built environment*, 22(4), str. 359–368. DOI: 10.1007/s10901-007-9089-2
- Dan, H. (1994): A human-ecology approach to environmental design: An integrative human ecology design derived from Chinese agricultural culture experiences. *Journal of Environmental Sciences*, 6, str. 478–486.
- De Groot, J. J. M. (1897): *The religious system of China*. Dostopno na: <https://bit.ly/2XTVab8> (sneto 1. 15. 2015).
- Feuchtwang, S. (1974): *An anthropological analyses of Chinese geomancy*. Bangkok, White lotus.
- Field, S. L. (2006): *An overview of ancient fengshui*. Dostopno na: <http://www.fengshuigate.com/overview.html> (sneto 5. 9. 2006).
- Freedman, M. (1968): *Geomancy. Proceedings of the Royal anthropological institute of Great Britain and Ireland*. Dostopno na: <https://bit.ly/34ualor> (sneto 6. 6. 2013).
- Golob, N., in Petrovčič, M. (2018): Hokkaido pumpkins and Huawei phones: Anti-hiatus tendencies in Slovene. *Acta Linguistica Asiatica*, 8(2), str. 63–82. DOI: 10.4312/ala.8.2.63-82
- Gray, J. (2017): *Domestic mandala: architecture of lifewoods in Nepal*. London, Routledge.
- Han, K. T. (2001): Traditional Chinese site selection – feng shui: An evolutionary/ecological perspective. *Journal of Cultural Geography*, 19(1), str. 75–96.
- Han, K. T. (2004): A preliminary study of Luan Tou feng shui landscapes and psychological reactions. *Journal of psychology in Chinese societies*, 5(2), str. 289.
- Han, K. T., in Amita, S. (1996): An empirical study of feng shui in landscape. *Environments*, 23(3), str. 36–49.
- Hobson, J. S. P. (1994): Feng shui: Its impacts on the Asian hospitality industry. *International journal of contemporary hospitality management*, 6(6), str. 21–26. DOI: 10.1108/09596119410070440
- Hong, W. T., Abdul-Rahman, H., in Wang, C. (2017): Are feng shui bedroom rules practical from the architectural perspective? V: *Academic journal of feng shui*. Dostopno na: http://ajofengshui.co.nf/wp-content/uploads/2017/05/Hong_Wan_Thing_2017_Bedroom_Rules_L_P.pdf (sneto 1. 3. 2018).
- Hwangbo, A. B. (1999): A new millennium and feng shui. *The journal of architecture*, 4, str. 191–198.
- Kalland, A. (1999): Houses, people and good fortune: geomancy and vernacular architecture in Japan. *Worldviews: global religions, culture and ecology*, 3. Dostopno na: https://brill.com/view/journals/wo/3/1/article-p33_3.xml (sneto 1. 1. 2018). DOI: 10.1163/156853599x00036
- Kališnik, M., in Lah, L. (1998): *Uvod v znanstvenoraziskovalno metodologijo*. Ljubljana, Univerza v Ljubljani, Fakulteta za arhitekturo.
- Kryžanowski, Š. (2012): *Feng shui: primerjalna študija izbranih tradicionalnih priporočil in sodobnih dognanj*. Magistrsko delo. Ljubljana, Univerza v Ljubljani, Fakulteta za arhitekturo.
- Kryžanowski, Š. (v tisku): *Feng shui in apercpcija prostora: pregled znanstvenih prispevkov in terenska analiza učinkovitosti priporočil*. Doktorska disertacija. Ljubljana, Alma Mater Europaea, Institutum Studiorum Humanitatis – Fakulteta za podiplomski humanistični študij.
- Kubny, M. (2008): *Feng shui, die Struktur der Welt*. Drachen Verlag.
- Lim, J. T. Y. (1997): *Feng shui und Gesundheit*. Sulzberg, Joy Verlag, str. 71–83.
- Lim, J. T. Y. (2000): *Feng shui fur Buero und Business*. Muenchen, Integral.
- Lip, E. (1979): *Chinese geomancy*. Singapore, Times Books International.
- Lip, E. (1986): *Feng shui for the home*. Singapore, Heian International.
- Lip, E. (1994): *Feng shui for bussiness*. Singapore, Times Books International.
- Lynch, E. S. (2003): *Feng shui as a site design tool: assessing conditions of human comfort in urban places*. Magistrsko delo. University of Arizona, Architecture and landscape architecture.
- Mak, M. Y. (2014): Feng shui villages in Hong Kong: a case study of Tai Fu Tai mansion«. Dostopno na: https://www.researchgate.net/profile/Michael_Mak/publication/229047728_FENG_SHUI_VILLAGES_IN_HONG_KONG_A_CASE_STUDY_OF_TAI_FU_TAI_MANSION/links/0f31753b40782a5ed8000000/FENG-SHUI-VILLAGES-IN-HONG-KONG-A-CASE-STUDY-OF-TAI-FU-TAI-MANSION.pdf (sneto 2. 7. 2016).
- Mak, M. Y. (2017): An empirical study of modern sustainable office buildings in Sydney from the feng shui perspective. V: *Academic journal of feng shui*. Dostopno na: http://ajofengshui.co.nf/wp-content/uploads/2017/06/Mak_Michael_2017_Empirical_Modern_Sustainable_PA.pdf (sneto 28. 2. 2019)
- Mak, M. Y., Ng, S. T., in Chen, S. E. (2005): Formulating a hierarchical structure of feng shui knowledge. V: Loforte, F., Love, P. D. E., Davidson, C. H., Egbu, S. O. in Dimitrijevic, B. (ur): *Information and knowledge management in a global economy: challenges and opportunities for construction organizations*, str. 395–404. Salford, UK, CIB-W102.
- Mak, M. Y., in So, A. T. (ur) (2009): *Research in scientific feng shui and the built environment*. Hongkong, City University of Hong Kong Press.
- Mak, M. Y., in So, A. T. (2011): *Scientific feng shui for the built environment*. Hongkong, City University of Hong Kong Press.
- March, A. L. (1968): An appreciation of Chinese geomancy. *The journal of Asian studies*, 27(2), str. 253–267. DOI: 10.2307/2051750
- Moran, E., Yu, J., in Biktashev, V. (2005): *The complete idiot's guide to feng shui*. New York, Alpha books.
- Needham, J. (1956): *Science and civilisation in China: vol. 2 History of scientific thought*. Cambridge, Cambridge University Press.
- Nemeth, D. J. (1987): *The architecture of ideology: neo Confucian imprinting on Cheju island, Korea*. Berkley, University of California Press.
- Octavia, L., in Gunawan, T. (2014): Feng shui in modern house design: searching for the rationale and possible impacts assesment. *Journal of architecture and built environment*, 41(1), str. 43–50. DOI: 10.9744/dimensi.41.1.43-50

Paton, M. (2013): *Five classics of feng shui, Chinese spiritual geography in historical and environmental perspective*. Leiden, Brill.

Pheng, L. S., Xiaopeng, D., in Ting, Q. L. (2012): Assimilating total building performance mandates with Chinese geomancy principles and scenarios. *Facilities*, 30(13/14), str. 558–589. DOI: 10.1108/02632771211270568

Poulston, J. (2009): *Taking feng shui seriously*. Dostopno na: <https://openrepository.aut.ac.nz/bitstream/handle/10292/1628/poulston%20paper2%20-%20feng%20shui.pdf?sequence=2&isAllowed=y> (sneto 12. 4. 2018).

Poulston, J., in Bennett, R. (2012): *Feng shui, fact and fiction: an exploratory study*. Dostopno na: https://www.researchgate.net/profile/Jill_Poulston/publication/235260228_Fact_fiction_and_feng_shui_An_exploratory_study/links/5669e80308ae62b05f027175/Fact-fiction-and-feng-shui-An-exploratory-study.pdf (sneto 12. 4. 2018). DOI: 10.1108/02632771211194257

Schumm, C. (2004): *Feng shui im Krankenhaus: Architektur und Heilung*. Dunaj, Springer Verlag. DOI: 10.1007/978-3-7091-0578-8_1

Sit, W. (2004): Feng shui elements and life areas approach for older persons in a nursing care facility. *Libraries Texas woman's univeristy*. Dostopno prek: <https://twu-ir.tdl.org/handle/11274/105> (sneto 24. 3. 2018).

So, C. H. (2009): *An examination of the effect of feng shui on residential property price in Hong Kong*. Diplomsko delo. Hongkong, The university of Hong Kong, Department of real estate and construction.

So, A. T. P., in Lu, J. W. Z. (2001): Natural ventilation design by computational fluid dynamics - a feng-shui approach. *Architectural science review*, 44(1), str. 61–69. DOI: 10.1080/00038628.2001.9697454

Thongkamsamut, C., in Buranakarn, V. (2007): Form follows feng shui. *Journal of environmental design and planning Nakhara*, 2, str. 37–54.

Um, J. S. (2009): Exploring spatially prioritized parameters of feng-shui from tomb footprint. *International journal of geographical information science*, 23(4), str. 513–529. DOI: 10.1080/13658810802055954

Volters, D. (1998): *Feng Shui*. Beograd, Esoteria.

Whedon, C. A. (2000): Frames of reference that address the impact of physical environments on occupational performance. *Work*, 14(2), str. 165–174.

Wu, W. Y., Yau, O. H. M., in Lu, H. Y. (2012): Feng shui principles in residential housing selection. *Psychology & marketing*, 29(7), str. 502–518. DOI: 10.1002/mar.20538

Wong, E. (1996): *Feng shui*. Boston, Shambala.

Wong, E. (2001): *A master course in feng shui*. Boston, Shambala.

Xu, J. (2003): *A framework for site analysis with emphasis on feng shui and contemporary environmental design principles*. Doktorska disertacija. Blacksburg, VA, Virginia Polytechnic Institute and State University.

Xu, P. (1998): Feng shui models structured traditional Beijing courtyard houses. *Journal of architectural and planning research*, 15(4), str. 271–282.

Xu, Z. (2004): Geomancy theories and behavior psychology. *Journal of Hefei university of technology* (Social sciences). Dostopno na: http://en.cnki.com.cn/Article_en/CJFDTotat-HFGS200402034.htm (sneto 1. 3. 2018).

Yau, O. H. M. (2012): The key components of feng shui and their implications for marketing. *Psychology & marketing*, 29(7), str. 479–487. DOI: 10.1002/mar.20536

Yoon, H. K. (1980): The image of nature in geomancy. *Geo Journal*, 4(4), str. 341–348.

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Community engagement in developing urban design guidance for heritage sites: The case of Bursa, Turkey

In recent years, central and local governments have carried out studies to establish a legal administrative infrastructure for urban design and to develop urban design guidance to preserve the identity of historic cities under the pressure of rapid urbanization in Turkey. The main aim of this article is to explain how we implemented a participatory urban design guidance (PUrDeG) model for cultural heritage sites, which was developed as part of a research project. We explain how we used various techniques to engage various actors in preparing urban design guidelines for a cultural heritage site. In addition, the article discusses the importance of community engagement techniques and processes in developing urban design guidance, and the context of guidelines for sustainable conservation of cultural heritage sites with examples from the United Kingdom and Turkey. It then presents a case

study conducted in the Hanlar District, a Unesco world heritage site in Bursa, Turkey. The case study includes research on planning decisions, site analysis, a survey of urban residents, in-depth interviews with local artisans, and an urban design workshop with various actors. The main outcomes of this study include a presentation of how to use various community engagement techniques to prepare urban design guidelines for cultural heritage sites in Turkey, an urban design guidance system for Bursa, and a list of recommendations related to urban design guidelines for the Hanlar District and Bursa in the light of UK experience.

Keywords: urban design guidelines, cultural heritage, community engagement, Unesco world heritage sites, Hanlar District

1 Introduction

Cultural heritage sites have many sociocultural and socio-economic values that enable communities to relate to their past, and they have great importance in maintaining urban identity and memory. However, rapid urbanization due to population growth, urban regeneration, or traffic or tourism pressure, which are currently common problems for many cities, is harming the authenticity and integrity of heritage sites in urban centres (Hassler et al., 2002; ICOMOS, 2005; Van Oers, 2010; Aksoy & Enlil, 2012; Brombach et al., 2013). In addition, the lack of a holistic system of sustainable planning, conservation, and design, and especially the lack of essential community engagement and urban design tools, are threatening the sustainability of heritage sites in developing countries by causing the quality of public life and space.

Today, heritage studies are focused on sustainable conservation and development strategies in which community engagement and urban design tools play important roles (Özcan, 2009). Within this context, statutory or discretionary urban design guidelines need to be designed and implemented to conserve the contextual uniformity, continuity, and authenticity of cultural heritage sites (Tiesdell et al., 1996). Urban design guidelines are mostly described as supplementary planning documents that provide additional information and guidance in design matters. They explain how specific types of development can be carried out in accordance with a plan's design policies. A guideline explains a set of design principles relating to that topic, defines common design failings and helps avoid them, and supports local authorities in communicating with everyone involved in the development process for negotiation (DETR, 2000). Especially in heritage sites, central and local governments carry out urban development following urban design guidelines to preserve local characteristics (Madanipour, 1996; DETR & CABE, 2000). The guidelines should be developed in the context of every specific city, district, or heritage site (Von Hausen, 2013). At this point, community engagement is crucial in preparing design guidelines to raise the capacity of local communities, to improve design proposals in historical places, to help create consensus between related actors so that planning applications can be processed more smoothly and quickly, and to help engender a sense of community and social bonds among the local community (Yeang, 2000).

Many studies emphasize the importance of community engagement in urban design studies for sustainable urban conservation of heritage sites. For example, Carmona (2009) stresses that one of the ten universal principals of urban design is self-sufficiency, which requires community engagement in

urban design. Nasser (2003) states that reuniting urban form with the activities and uses that take place within them and integrating land-use planning with local needs and aspirations are very crucial for holistic community development at heritage sites. Elnokaly and Elseragy (2013) explain that, sustainable urban conservation requires maintaining the typical urban tissue and essential qualities of the historic sites and the life of the communities residing there while adapting the physical structures and activities to some contemporary requirements. Križnik (2018) also emphasizes the need for citizen participation to ensure social cohesion for sustainable urban regeneration and urban redevelopment of deprived urban areas.

The main aim of this study is to explain how the authors implemented the participatory urban design guidance (PUrDeG) model, which was developed as part of a research project conducted in the Hanlar District, which is a Unesco world heritage site in the city of Bursa. Three hypotheses are discussed in this article:

- Urban design tools have important roles in sustainable conservation of cultural heritage sites in developed countries;
- Community engagement is an integral part of planning and urban design in developed countries; and
- Different types of urban design guidelines are required to sustain the Hanlar District of Bursa.

In addition, two of the actions defined in the Bursa and Cumalıkızık Management Plan were carried out as part of this study. One of these is developing urban design guidelines specific to the management sites in order to preserve local characteristics in accordance with urban design principles. The other one is balancing cultural values and socioeconomic status by ensuring the active participation and cooperation of the public to increase the quality of life (Bursa Site Management Unit, 2013).

2 Experiences from the UK: Urban design and community engagement tools at cultural heritage sites

Design governance tools are categorized as formal (legally defined by statute) or informal (discretionary/non-statutory) tools. Formal tools are categorized as guidance, incentive, and control, and informal tools range from the gathering of evidence to the dissemination of knowledge through the active promotion of design, the evaluation of design quality, and finally direct assistance with projects and/or design through the lens of the Commission for Architecture and the Built Envi-

Table 1: Community engagement process and methods in preparing design tools, UK examples.

Tool	Status	Consultation and engagement methods	Community engagement tools and consultation
Liverpool supplementary planning documents (SPDs)	Not included under term local plan. Helps applicants make successful applications	E-mail /written notification to statutory consultees, documents on LCC website for general comment, press release and public notices, dissemination of electronic material through umbrella organizations, tailored meetings	Liverpool Statement of Community Involvement: four-week consultation. <ul style="list-style-type: none"> • Informal scoping consultation • Publish draft SPD for comment • Adopt SPD
Bath supplementary planning documents	Supplement policies contained in DPDs, must follow statutory process, not subject to formal examination	Media, notification by letter /e-mail, area notifications, local newspapers / publicity, internet, hotline, seminars and lectures, public inspection, formal and informal dialogues, meetings and interactive workshops, surveys, steering/advisory / working groups, discussions with individuals and groups, internal corporate discussions	Bath and North East Somerset Statement of Community Involvement: formal six-week consultation. <ul style="list-style-type: none"> • Informal community involvement in preparing draft SPD • Formal consultation on SPD • Adoption by council
Edinburgh supplementary guidance and planning guidelines	In connection with strategic or local development plans. Supplementary guidance forms part of development plan.	Survey Monkey questionnaire and analysis, written responses from organizations and individuals, design guidance blog, public / stakeholder pamphlets, bus shelter advertisement, workshops, panel presentation, feedbacks	Planning Advice Note: Community Engagement: subject to publicity, four-week consultation. <ul style="list-style-type: none"> • VOiCE software to design and deliver effective engagement. Edinburgh Street Design Guidance Consultation Report <ul style="list-style-type: none"> • Establish scope of review • Awareness raising/testing • Circulate draft for consultation • Awareness raising and reviews • Road testing the guidance

Source: LCC (2013); B&NESC (2007); CEC (2018c); The Scottish Government (2010).

ronment (CABE) in the UK (Carmona, 2017). Design guidelines can be described as statements that specify how to meet design objectives (Lang, 1996) based on urban design issues such as the district–context relationship, the scale–character relationship, the public–private space balance and quality, the accessibility–permeability relationship, the density–use relationship, mixed use and typology, and sustainable structures and environments. In line with these issues, objectives of urban design such as maintaining character, continuity and enclosure, the quality of public space, accessibility, legibility, adaptability and harmony, diversity, and ecological balance should also be achieved (DETR & CABE, 2000; Yeang, 2000; Punter, 2007; Von Hausen, 2013).

There are many types of design guidance based on the objectives of urban design. Carmona (2011) defines four types of formal design guidance with a different degree of locational specificity and interpretation. These are design standards (generic, prescriptive), design coding (site-specific, prescriptive), design policy (generic, performance-based), and design frameworks (site-specific, performance-based). In addition to these, practice guides, which refer to the sorts of informal guidance

on generic aspects of urban design/development practice and are created to share best practice, either in process or outcomes, are also widely used in the UK (Cowan, 2002; CABE, 2003; Ministry of Environment and Urbanization & Mimar Sinan Fine Arts University, 2016; Carmona, 2017).

Many categories of guidance and tools are used in planning practice in the UK. Guidance on design provides advice on the key design points to take into account while defining planning processes and tools. UK policy statements and legislation also encourage community engagement in design, heritage, and planning issues. English local authorities develop statements of community involvement (SCIs) to engage the local community in the development of planning policy and the determination of planning applications (Royal Town Planning Institute & Consultation Institute, 2005).

In Liverpool and Bath, community engagement is guaranteed by statements of community involvement (SCIs) which explain the process, methods, and other details of community involvement in preparing the local development framework, including development plan documents (DPDs) and supple-

mentary planning documents (SPDs), and in the consideration of planning applications (B&NESC, 2007; LCC, 2013). SPDs provide additional details to show how policies in development plan documents should be implemented. These include design guides, development briefs, and topic-based papers. Community engagement in the preparation of SPDs is mainly summarized in three phases: informal scoping consultation, formal consultation on the draft SPD, and preparation and adoption of the final SPD. A range of methods are used for consultation and engagement (Table 1; B&NESC, 2007; LCC, 2013). In Liverpool, SPDs – which must be consistent with national planning policy and conform to regional and local planning policy – have formal status as part of an area's planning framework. The Liverpool Maritime Mercantile City World Heritage Site SPD aims to raise standards of design and conservation and to provide guidance for protecting and enhancing the outstanding universal value (OUV) of the WHS while encouraging investment and development that secures a healthy economy and supports sustainable regeneration for all relevant stakeholders (LCC, 2009). In Bath, there are also various SPDs that are formerly adopted by a council resolution and can be a material consideration in planning decisions (B&NESC, 2018). The Bath City-Wide Character Appraisal SPD aims to identify key elements of character by highlighting variations across the city (B&NESC, 2005). The City of Bath WHS Setting is another SPD that provides information and the tools needed for effective protection and appropriate management of the setting (B&NESC, 2013). The Streetscape Manual SPD is developed to guide the selection, design, installation, and care of the district's streetscape and its historic preservation (B&NESC, 2005). In addition to these, the Pattern Book for Bath's public realm (two volumes) sets out the framework for the quality of streets and public spaces in the city centre (B&NESC, 2015).

In Scotland, in addition to legislation, specific advice notes and guidance on community engagement are also available from a variety of sources (Royal Town Planning Institute & Consultation Institute, 2005). If supplementary guidance is to be adopted as part of the development plan, public consultation is a legal requirement (The Scottish Government, 2010). In Edinburgh, there are two categories of guidance. Supplementary guidance provides further details on policies in the adopted Edinburgh Local Development Plan, and planning guidelines provide advice on a range of topics to guide new development (CEC, 2018a). The Edinburgh Standards for Urban Design are set out as urban design principles and are shown within a hierarchy that comprises the citywide, local area, site / street, and public realm dimensions (CEC, 2003). The Edinburgh Design Guidance sets out the council's expectations for designing new developments in Edinburgh to achieve the highest quality of design and to integrate well with the existing

city (CEC, 2018b). The Edinburgh Street Design Guidance, which aims to coordinate street design and to promote collaboration between different disciplines, is a user-focused, non-statutory guidance document (CEC, 2015). Another guidance on listed buildings and conservation areas provides information on repairing, altering, or extending listed buildings and unlisted buildings in conservation areas (CEC, 2019).

As seen, England and Scotland are prominent examples that developed, defined, and experienced urban design and community engagement tools as key parts of their planning and urban design legislation and professional practice. In both countries, different types of design tools that support each other have been established from the national scale to the local scale for heritage sites. Tools adopted as part of a development plan have formal status as a supplementary planning document/guidance for which public consultation is required. There is also guidance that explains how to conduct community engagement and which tools should be used during planning, design, and conservation (Table 1). In addition, there are many public bodies, charities, and initiatives that support and guide community engagement in the UK.

As a result, UK experiences showed that urban design tools have important roles in sustainable conservation of cultural heritage sites, and community engagement is an integral part of planning and urban design in developed countries. Thus, the first and second hypotheses of this study were confirmed. The examination of urban design and community engagement tools in the UK provided lessons for the community engagement techniques in preparing urban design guidelines and developing an urban design guidance system for Bursa.

3 Community engagement and urban design guidance in the Turkish planning system

The planning system in Turkey is subject to Development Law no. 3194, adopted in 1985. In this law and its regulations, there is no definition of community engagement and urban design within the planning system. Within the scope of the Ninth Development Plan, the Integrated Urban Development Strategy and Action Plan (KENTGES) was prepared in 2010 to raise living standards and to strengthen the economic, social, and cultural structures of cities. The need for community engagement and urban design guidelines was first defined in this document in the Turkish planning system (MPWS, 2010). After the establishment of the Department of Urban Design within the scope of the Ministry of Environment and Urbanization General Directorate of Spatial Planning in 2013, studies to develop the practice of community engagement

and the preparation of urban design guidelines have accelerated (MPWS, 2010).

In the same period, Regulation of Development Law no. 3194 was amended in 2014, and the principles of urban design projects were defined in the Regulation for the Preparation of Spatial Plans. It was also stated that urban design guidelines should be prepared to develop the urban image, meaning, and identity, to raise the aesthetic and artistic value of spaces, and to arrange the buildings in a harmonious way in the direction of the urban design projects. However, a study by Rezafar and Turk (2018) showed that many factors related to urban design and aesthetic assessment are lacking in the Development Law and in Turkish planning legislation. Thus, they defined which parameters, in accordance with their scope, can be incorporated into legislation at the national level, city/town level, and local level including design guidelines in their study.

In addition, the regulation does not include any direct reference to community engagement in planning. However, it emphasizes that approved environmental plans and local plans must be announced to the public to receive comments within thirty days, all types of plans and their supplements must be open to the public, the media, and electronic communications, and seminars, conferences, exhibitions, and meetings can be used to inform the public about the plans. In addition, the Instruction for the Preparation and Evaluation of Urban Design Projects to be Approved by the Ministry of Environment and Urbanization (2015) states that one of the objectives of urban design projects is to facilitate public negotiation by informing residents, professional chambers, and non-governmental organizations about urban design projects by setting up meetings with mukhtars, holding press briefings, and so on, and to conclude the process with reports by reviewing their opinions and recommendations. However, the instruction does not present any engagement method to facilitate public negotiation. At present, studies to develop the practice of community engagement and the preparation of urban design guidelines are in progress at the ministry in cooperation with professional chambers, universities, and non-governmental organizations. In the near future, the ministry will require the municipalities to develop urban design guidelines.

While these studies were being carried out by various public institutions, the authors realized that there is a gap in studies about sustainable urban conservation of heritage sites in the context of using urban design tools. Thus, the authors started a research project called An Urban Design Guide Model for the City Centre of Bursa at Bursa Uludağ University in 2012. This project aims to develop a participatory urban design guidance (PUrDeG) model for cultural heritage sites, and a case

study was carried out in the Hanlar District of Bursa in the context of this project between 2012 and 2015.

4 Materials and methods

Bursa (Figure 1) is the fourth-largest city of Turkey, and it is located in the Southern Marmara region, with a population of 2,936,803 (in 2017). It has always been an important centre of civilization, dating back to 6500 BC. The city of Prusa (modern-day Bursa) was founded in 185 BC by the Bithynians. After Roman and Byzantine rule, Bursa was conquered by Sultan Orhan in 1326 and became the capital of the Ottoman Empire (Bursa Site Management Unit, 2013).

Bursa and Cumalıkızık was nominated as a Unesco cultural heritage site in 2014 based on four cultural criteria (Bursa Site Management Unit, 2013). It was a serial nomination of eight world heritage sites (in six buffer zones; Figure 1), which illustrate the creation of the urban and rural system of the Ottoman Empire (Bursa Site management Unit, 2013). The Hanlar District (Figure 1) is one of the cultural heritage sites in the city centre of Bursa. It was established on the caravan roads and in the foothills of Uludağ in the fourteenth century as a trade centre of which there are many examples of monumental and civil architecture (inns, mosques, public baths, bazaars, etc.) with well-preserved integrity and authenticity, such as the Orhan Ghazi complex. The district reflects the urban identity of Bursa with its original urban and architectural character and traditional trade life.

4.1 Research methodology

This study is a part of a research project that aimed to develop a PUrDeG model for the city centre of Bursa. However, this article does not focus on how the model was developed by the project team; it presents the local community engagement methods used in preparing urban design guidance for Bursa's Hanlar District based on the UK practice. The article also presents the model itself (Figure 2) to define the phases implemented during the case study.

The methodology of the research is composed of three phases, which are also included in the model. In the analysis phase, research on current development and management plans and urban design studies of the Hanlar District, site analysis, a survey of urban residents (users), and in-depth interviews with local artisans were conducted from the perspective of the urban design issues and objectives of the Bursa and Cumalıkızık Management Plan. In the synthesis phase, the results of the analyses were evaluated and urban design problems and the expectations of users and local artisans were categorized. In the

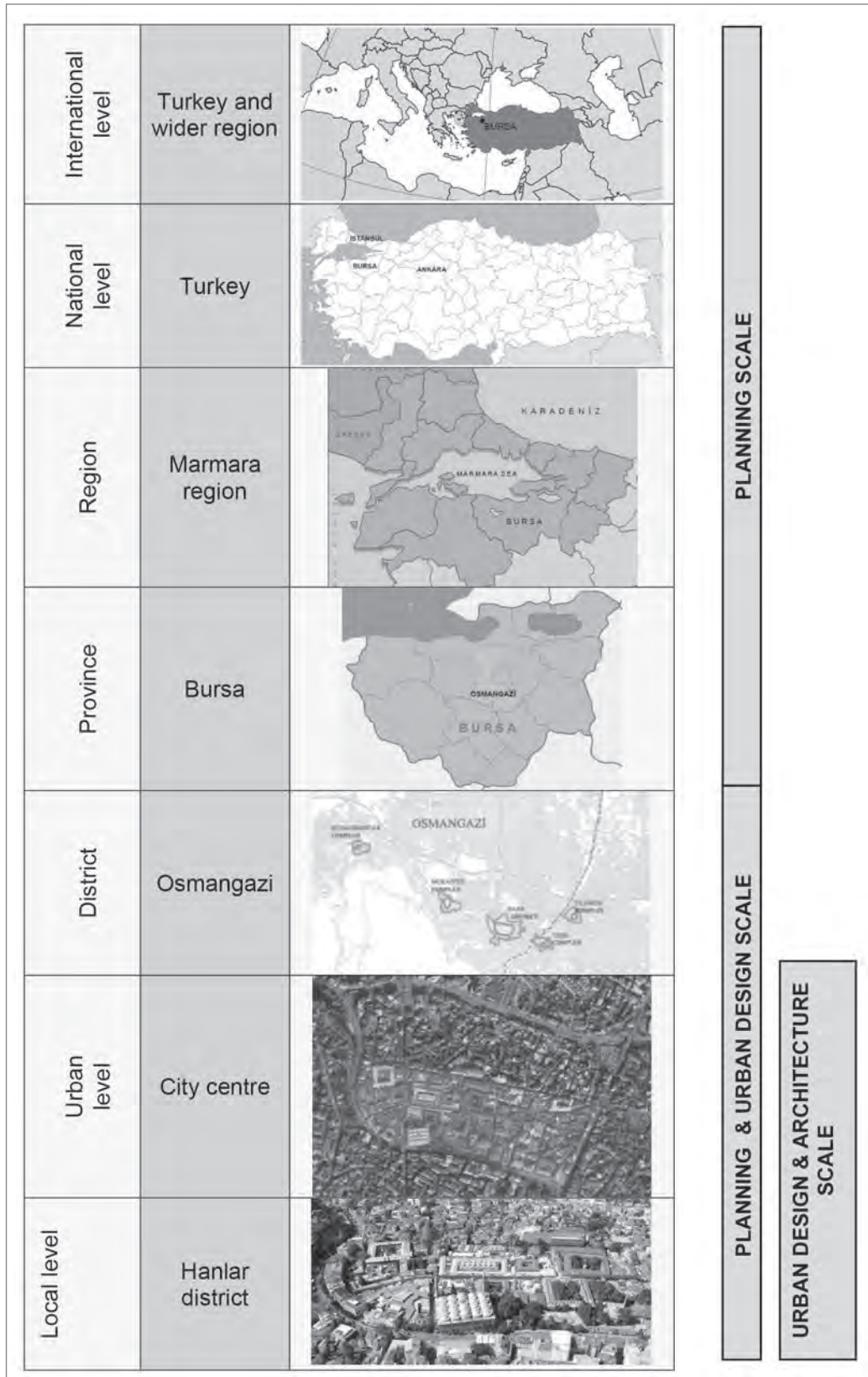


Figure 1: Location of the case study area at various planning scales (source: Bursa Site Management Unit, 2013; illustration: authors).

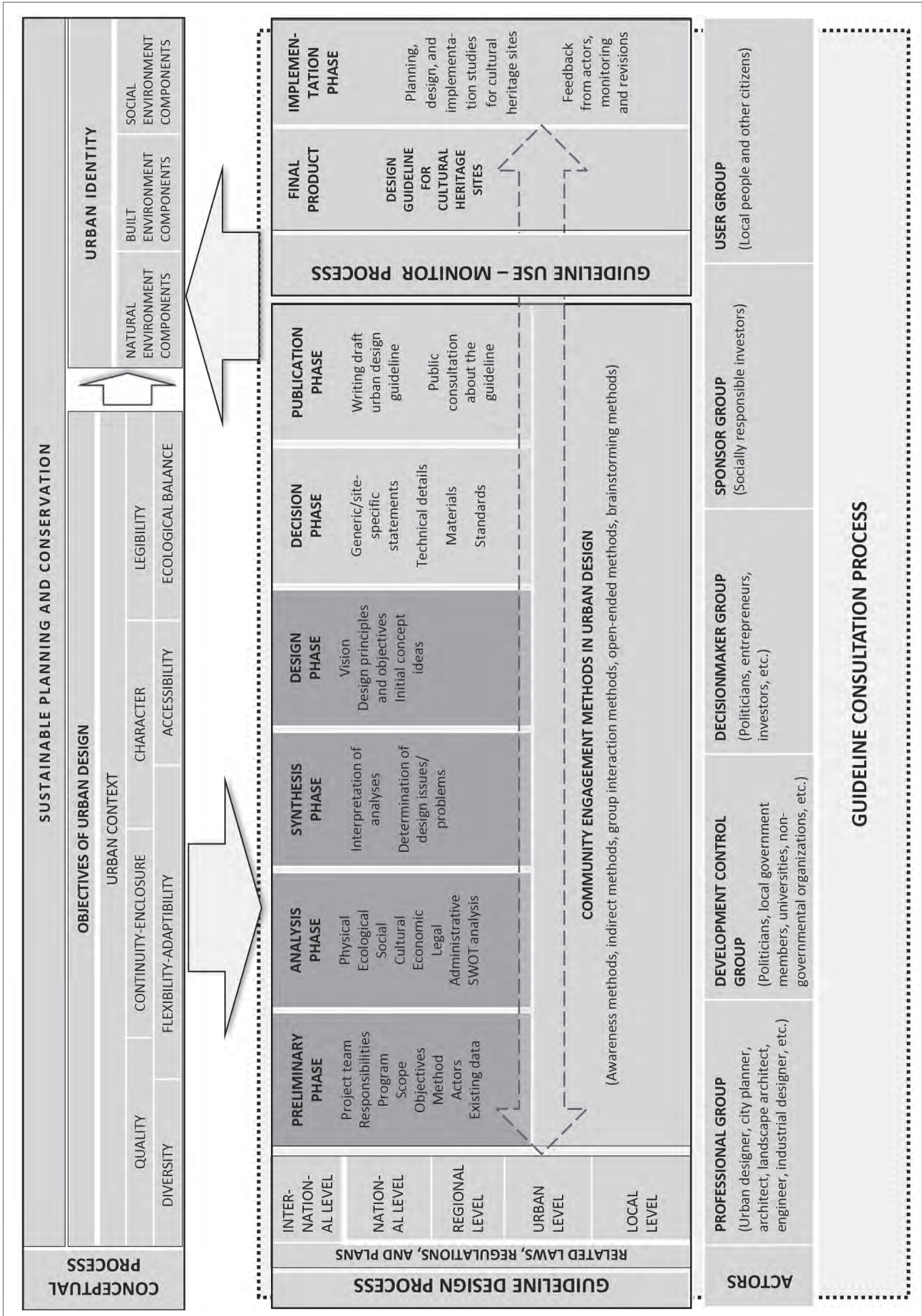


Figure 2: PURdeG model for cultural heritage sites (source: Polat et al., 2018).

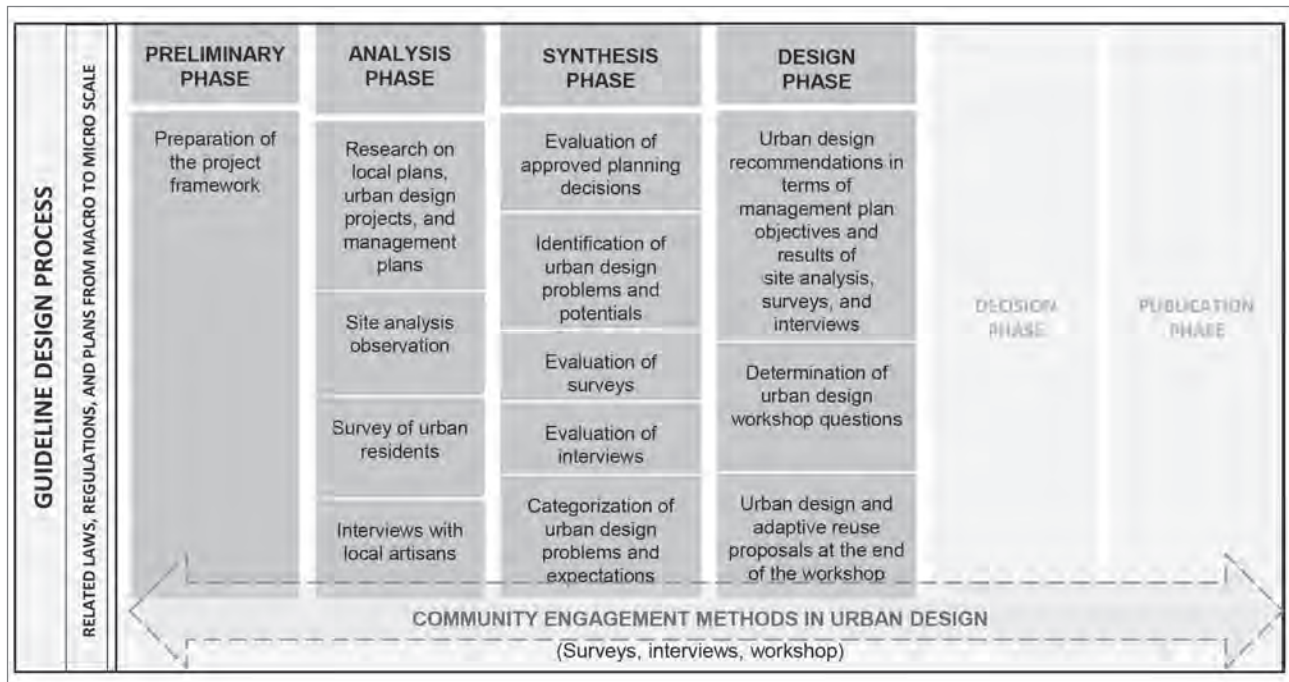


Figure 3: Implementation of the PUrDeG model in the Hanlar District (illustration: authors).

design phase, the urban design recommendations were developed to solve the problems and meet the expectations of the district, and a participatory urban design workshop was held in which architecture students developed urban design projects for idle public spaces in the Hanlar District. Thus, this case study allowed the project team to develop the PUrDeG model to sustain cultural heritage sites (Figure 3).

The model includes four basic processes (conceptualization, guideline design, guideline monitoring, and guideline consultation) to develop and implement an urban design guideline. Conceptualization is based on urban design issues and urban identity elements in terms of sustainable urban conservation. Guideline design is based on urban design. It is composed of six interrelated steps (preliminary, analysis, synthesis, design, decision, and publication phases). Guideline monitoring includes receiving feedback and making revisions during the use of the guideline. Guideline consultation is based on the identification of actors and community engagement techniques in urban design, and is carried out with the other three processes (conceptualization, guideline design, and guideline monitoring). All of these are interrelated, flexible, and adaptive to feedback (Polat et al., 2018).

4.2 Evaluation of the approved planning decisions

The Reyhan–Kayhan–Hanlar District was declared an urban conservation area in 1986 due to its historical qualities. Stra-

tegic, master, and local plans have been approved for this area, including the Hanlar District. The main objective of the 2020 Environmental Plan for Bursa (scale: 1:100,000, adopted in 1998) was the conservation, rehabilitation, and restoration of the historical centre, which is located in the central planning area, while supporting service sector growth in the district by 2020. No density increase was allowed. In the Bursa Central Area and Reyhan–Kayhan–Hanlar District Preservation Plan (scale: 1:1,000, 1988–2005), seven special project areas were identified in the Hanlar District. In special project areas, any kind of construction activities (renovation, repair, reconstruction, etc.) can only be implemented as part of restoration, adaptive reuse, and urban design projects approved by the Bursa Cultural and Natural Heritage Preservation Board. However, no urban design projects or tools have been developed for the Hanlar District so far. Although an urban design competition for Orhangazi Square and its surroundings in the Hanlar District was arranged in 2012, the first-prize project was not implemented.

With the foundation of the Bursa Site Management Unit, the Unesco nomination of Bursa began, and the Bursa and Cumalıkızık Management Plan was prepared in 2013 with a participatory approach. The plan sets out objectives and actions related to the problems of the heritage sites. The main problems of the Hanlar District can be summarized as the lack of a holistic conservation approach for the district, the lack of a common database for sharing information between institutions, old and inadequate local conservation plans, physical

and functional dilapidation, the lack of user diversity, the lack of a common architectural language between the new developments and historical urban pattern, and too many illegal additions to the historic buildings, which overshadow their original architectural character. These problems can be grouped under the following five urban design issues: governance and engagement (during urban design), the accessibility – permeability relationship, the scale – character relationship, sustainable structures and environments, and mixed-use balance. Thus, the proposed design guidance should address these urban design issues to ensure the sustainability of the Hanlar District.

4.3 Site analysis results

The project team faced similar problems and potentials as in the management plan during the site analysis. Many problems and potentials were observed from the city scale to the building scale. The main problems are related to the lack of spatial quality and mixed use, security problems at night, poor accessibility for pedestrians, and deterioration of the historic pattern. The problems can be grouped under the following five urban design issues: district – context relationship, scale–character relationship, public – private space balance and spatial quality, accessibility – permeability relationship, and mixed-use and typology balance. The district also has many potentials, such as being a Unesco world heritage site with its historical and cultural qualities, being an easily accessible location in the city centre, and having some vacant lots that can be used for infill development opportunities. However, to allow community engagement, urban residents and local artisans in the Hanlar District were also included in the other phases of the case study.

4.4 Survey results

As part of the case study, a survey of urban residents was conducted. The main aim of the survey was to analyse the Hanlar District in terms of basic urban design issues (i.e., establishing district–context and scale–character relationships, public–private space balance and quality, accessibility – permeability and density – use relationships, mixed-use and typology, and creating sustainable structures and environments). Thus, the main issues that should be considered in the proposed design guidance could be determined. The target population of the survey was shopping mall users. Today many urban residents prefer spending time at shopping malls rather than in city centres. Thus, many city centres become abandoned and suffer from urban decay. Therefore, the survey was designed to measure the perceptions, satisfaction levels, and expectations of shopping mall users from the Hanlar District to attract them to the city centre.

The survey was carried out in the four largest shopping malls in Bursa, one of which is the biggest competitor for the Hanlar District because of its location in the city centre. The survey was applied to 370 volunteer users at the malls. Those who had lived in Bursa for less than a year, tourists, and non-volunteers were not included in the survey. There were thirty-four questions in the survey, and it took approximately ten to twelve minutes to complete. The first part of the survey was about user profile. The most important problem was the lack of user diversity. The second part of the survey was based on questions about defining character elements and the image of the Hanlar District. The main problem was the lack of sense of belonging. Traffic, noise, chaos, and crowds in the district have negatively affected the image of the district and social interaction. The third part of the survey was composed of questions about habits, problems, and management of the Hanlar District. The most basic problems related to the district are traffic density, poor access to the district, rarity of visits, lack of parking, inactive public spaces in some of the restaurants, poor management and publicity of the district, and lack of awareness about nomination of the heritage site. The fourth and final part of the survey was based on questions about users' expectations about the Hanlar District. According to the results, the greatest demand is for new cultural activity areas, adaptive reuse of historic buildings, and new design proposals for idle public spaces in the district. As a result, it was shown that the problems and expectations of shopping mall users are focused on the following five urban design issues: accessibility – permeability relationship, scale – character relationship, mixed-use balance, public–private space balance and spatial quality, and district – context relationship.

4.5 Results of in-depth interviews

However, to evaluate the socioeconomic conditions of local residents, it was decided to conduct in-depth interviews with a group of local artisans working in various sectors in the Hanlar District. Twenty-two in-depth interviews were carried out in cooperation with the Association of Bursa Historical Bazaar and Hanlar District (BTCHBD), a non-governmental organization that aims to conserve the historical pattern of the district, to meet the current needs and requirements of social life in the district, and to make the Hanlar District a centre of attraction (BTCHBD, 2010). During the interviews, semi-structured interview forms were used, and the interviews took fifteen to twenty minutes. Artisans from various sectors were required to evaluate their profession in terms of their income level and customer profile and to express their expectations of the physical, economic, social, cultural, and functional factors related to the district. The main problems of the district, according to interviews, are the following:

- Lack of cooperation between the institutions and local artisans (lack of proper authorization, lack of engagement, lack of promotional opportunities for the district, poor education facilities for local artisans, etc.);
- Barriers to restoration and reuse projects because of the high rates of private ownership;
- Lack of customer diversity and quantity (due to a lack of mixed-use areas and security concerns, low purchasing power, and low attractiveness of the bazaar together with new shopping malls in sub-centres of the city growing to the west, mostly domestic and Middle Eastern tourists); and
- Lack of transportation and accessibility opportunities (inadequate transfer points, lack of pedestrian routes, and lack of parking areas).

As a result, it was shown that the problems and expectations of local artisans are focused on the following five urban design issues: governance and engagement (during urban design), mixed-use balance, scale – character relationship, accessibility–permeability relationship, and sustainable structures and environments.

4.6 Urban design workshop results for the Bursa city centre

In accordance with the management plan objectives and the urban design recommendations developed as a result of the surveys and interviews, a participatory urban design workshop was held to search for public development opportunities for various areas in the Hanlar District similar to concept designs in the guidelines for Bath and Liverpool.

The workshop discussed concept design projects for idle public spaces in the Hanlar District while creating a participatory platform that brings together different actors such as the representatives of public institutions, local authorities, professional chambers, non-governmental organizations, local residents, architecture students, and the project team as the workshop coordinators. Most of the student proposals were related to adaptive reuse of the inns to allow the conservation of the traditional culture and character by hosting social and cultural events in the inns and public spaces, and the others were related to developing new green areas and high-quality public spaces in the city centre or to integrating contemporary architecture into the historical urban pattern. As a result, it was shown that the students focused on solving the following five urban design issues in their proposals: mixed-use and typology balance, district – context relationship, public–private space balance and spatial quality, accessibility – permeability relationship, and sustainable structures and environments. The workshop allowed local governors and other stakeholders to create new

visions about heritage sites while developing urban awareness about the sustainability of heritage sites and use of community engagement tools.

5 Discussion and recommendations

In terms of the relationship between sustainable planning, conservation, urban design, and architecture, the study showed that different types of urban design guidelines are required to sustain the Hanlar District of Bursa. Thus, based on the examples from the UK, an urban design guidance system that confirmed the third hypothesis of the article was proposed for Bursa (Figure 4). The design guidelines for Bursa should be developed as formal supplementary planning documents by the Metropolitan Municipality of Bursa with a participatory approach. The guidance system is composed of three scales, which are presented below.

Citywide design guidance:

- Bursa citywide character appraisal should give an understanding of what makes Bursa distinctive by considering its character and significance.
- Bursa urban design standards should set out general urban design principles to maintain and improve the visual image and identity of Bursa and ensure that high-quality urban design is sought from new development across the entire city.

Local/thematic design guidance:

- Bursa downtown urban design and public space framework should be a prospectus that presents the physical form of the downtown and defines how it can be transformed over the coming decades.
- Bursa and Cumalıkızık heritage sites local development framework should provide thematic guidance for protecting and enhancing the outstanding universal value of the Bursa world heritage sites while encouraging investment and development that secure a healthy economy and support regeneration.

Building /technical design guidance:

- Guidelines for conserving the local character of the Hanlar District can be related to streetscapes, listed buildings, landscape, lighting, pedestrian safety, and cycling.

However, to make the guidelines useful in practice for the Hanlar District, they should take account of expectations of the urban residents and the local artisans. As a result of the case study, the authors developed a matrix of failures in solving urban design issues and conducted five different analyses to establish which failures stood out in the Hanlar District (Table 2).

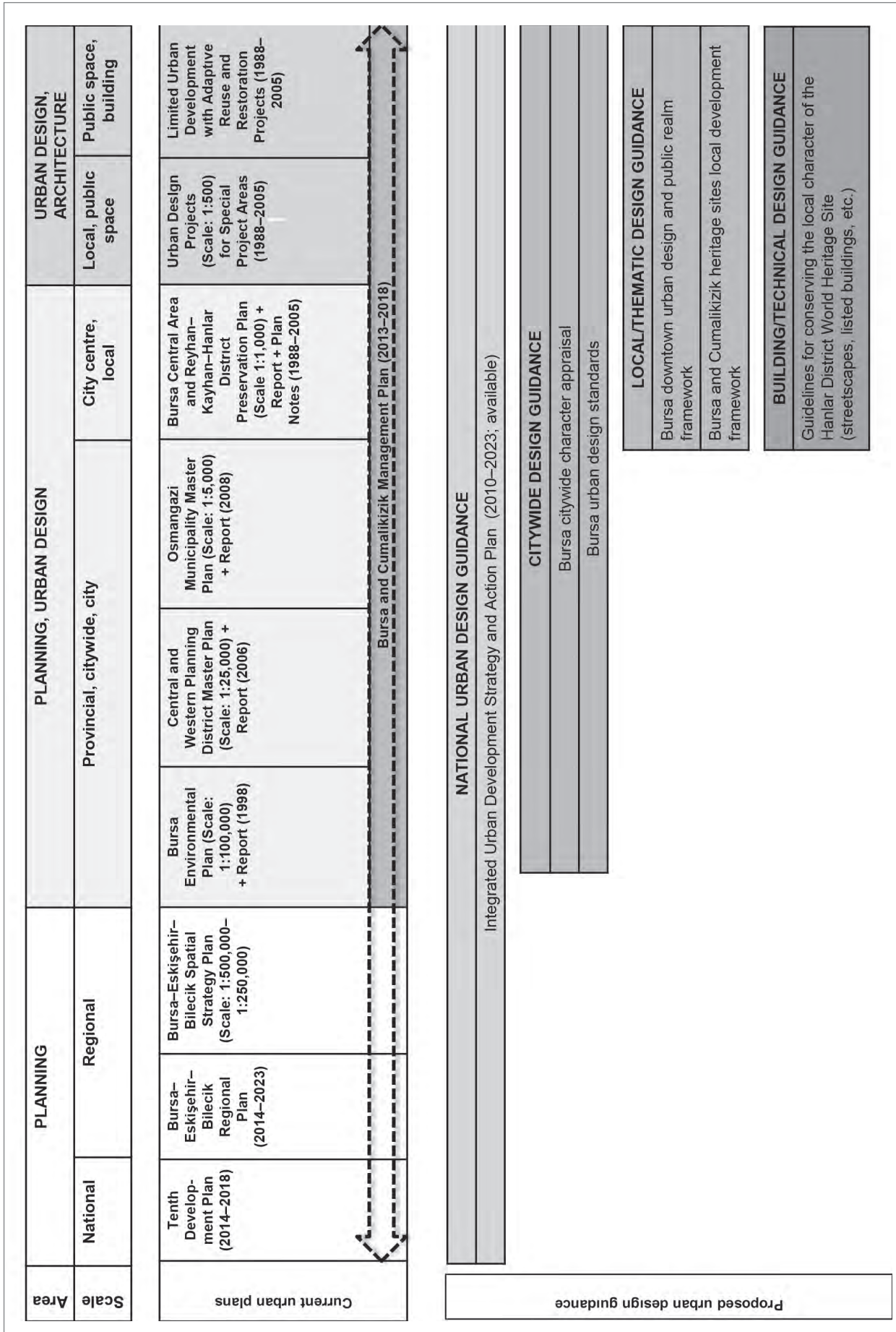


Figure 4: Proposed urban design guidance system for the Hanlar District in relation to the Turkish planning system (illustration: authors).

Table 2: Urban design issue (UDI) failures in the Hanlar District according to the case study.

UDI failure	Analysis					Total
	Site management plan decisions	Site analysis	Surveys	In-depth interviews	Workshop	
District – context relationship	2	5	3	1	4	15
Scale – character relationship	4	5	5	4	3	21
Public – private space balance and quality	2	4	4	2	4	16
Accessibility – permeability relationship	5	4	5	4	4	22
Density – use relationship	3	3	2	2	2	12
Mixed-use and typology balance	3	3	4	5	5	20
Sustainable structures and environments	4	2	1	3	3	13
Governance and engagement (during urban design)	5	1	2	5	1	14

Note: 1 – 5 = rarely–frequently mentioned

Source: authors.

Table 3: Recommendations about the process and context of developing urban design guidance for Bursa's Hanlar District.

Scale and details
National/regional scale: community engagement in preparing urban design guidelines
<ul style="list-style-type: none"> – Use different community engagement methods for preparing draft design guidelines – Public consultation
Publish draft guidelines on municipality website
Present in public spaces (libraries, museums, main squares)
<ul style="list-style-type: none"> – Formal views
Disseminate draft guidelines to related institutions
<ul style="list-style-type: none"> – Gather comments – Write public consultation report including municipality responses – Publish consultation report
Provincial, citywide, city scale: development of an urban design guidance system for Bursa
<ul style="list-style-type: none"> – Objectives related to the district-context and accessibility-permeability relationship in proposed urban design guidance for the Hanlar District
Prepare a Bursa citywide character appraisal (as for Bath)
Develop Bursa urban design standards (as for Edinburgh)
<ul style="list-style-type: none"> – General urban design principles should be developed in a sequential relationship between different levels. To identify and unify urban identity at different scales, cultural heritage sites should be integrated into new development areas, citywide views and city edges should be protected, the image and the legibility of heritage sites should be improved, and the network of green and civic spaces should be strengthened and extended. – According to urban residents, new pedestrian routes to strengthen north–south and east–west connections should be identified, pedestrian–vehicle interactions should be prevented, the legibility of tourist routes and access to underpasses should be increased, and new parking spaces integrated with public transport should be created. – According to local artisans, height and mass limits for new buildings should be defined to preserve the natural appearance of Bursa and the historical silhouette and the human scale of the Hanlar District.

Scale and details
City centre, local scale: development of an urban design guidance system for Bursa
<ul style="list-style-type: none"> – Objectives related to scale–character relationship, public–private space balance and quality, mixed-use balance, and density–use relationship <p>Develop a Bursa downtown urban design and public space framework (as for Liverpool)</p> <p>Prepare a Bursa and Cumalıkızık heritage sites local development framework (as for Liverpool)</p> <ul style="list-style-type: none"> – General urban design principles should be developed to form lively and attractive local places, reinforce local identity, and make distinctive urban form and coherent layouts. – In line with local artisans’ and urban residents’ expectations, mixed-use development should be encouraged, especially new spaces for cultural and recreational activities to enhance user diversity. Concept thematic design proposals for neglected public spaces should be developed as part of design workshops.
Local, public space scale: development of an urban design guidance system for Bursa
<ul style="list-style-type: none"> – Objectives related to accessibility–permeability and density–use relationships <p>Develop a Bursa downtown urban design and public space framework (as for Liverpool)</p> <p>Prepare a Bursa and Cumalıkızık heritage sites local development framework (as for Liverpool)</p> <ul style="list-style-type: none"> – To increase pedestrian accessibility of the Hanlar District, standards for streets, pavements, pedestrian crossings, and ramps should be set out in line with universal design principles. – In line with the expectations of local artisans and urban residents to develop pedestrian-oriented streets that are active twenty-four hours a day with strong local features, regulations that increase spatial comfort such as quantitative and qualitative standards for service facilities (tourism information, toilets, baby-care rooms, etc.) and urban furniture (lighting, seating elements, etc.) should be created.
Public, building scale: development of an urban design guidance system for Bursa
<ul style="list-style-type: none"> – Objectives related to scale–character relationship, and sustainable constructions and environments <p>Develop detailed guidelines to conserve the local character and distinctiveness of the Hanlar District (as in Bath, Liverpool, and Edinburgh)</p> <ul style="list-style-type: none"> – To conserve the authentic identity of historical buildings, and to restore and renovate them in line with current requirements, general principles related to proper repair, and external and internal alterations to listed buildings should be determined.

Source: authors.

These findings allowed the authors to develop a table of recommendations regarding the process and context of developing guidelines for Bursa’s Hanlar District according to the authors’, urban residents’ (shopping mall users), and local artisans’ perspectives and examples from the UK (Table 3).

6 Conclusion

The main contribution of this study is the integration of various community engagement techniques in the preparation of design guidelines. If the community is engaged from the very beginning, local authorities can overcome challenges more easily while developing urban design guidance, as seen in the UK examples. In this study, the main sample group was shopping mall users and the local artisans. The community in Bursa is made up of various groups, some of which face difficulties participating in heritage studies. These are hard-to-reach groups that comprise minority ethnic groups, young people, the elderly, transient populations such as new residents,

commuters, and students, Roma, people with disabilities, and single parents. Thus, it is important to engage hard-to-reach groups in urban studies.

In addition to these, significant conclusions are also drawn for Bursa and Turkey based on how the legislative framework about community engagement in preparing urban design guidance is developed and used in the sustainable conservation of heritage sites in the UK. First of all, legal documents explaining how to conduct community engagement in planning and urban design should be prepared, such as statements of community involvement. It is also important to define urban design tools legally in developing countries like Turkey. Because urban design practice is still in progress, local authorities’ experience is limited, and users’ awareness is inadequate in Turkey. In this study, various community engagement techniques were used to involve related actors. However, if public consultation is conducted electronically by local authorities, it can be more accessible and completed more quickly, and the comments can be evaluated more efficiently and practically. In addition, it is

necessary to define the methods of supervision and monitoring, as well as how to obtain feedback on whether the advice in the guidelines for the Hanlar District is implemented. A board of experts in the Bursa Site Management Unit can carry out this supervision. Education-awareness activities with urban residents and local artisans and awarding successful implementations can also be useful for encouraging the use of guidelines.

Considering that there are eighteen Unesco world heritage sites in Turkey, it is obvious that there is a need for systematic approaches in heritage studies. Design guidelines for these sites should be developed with site management plans in a coordinated way. Therefore, this study contributes to the development of urban design guidelines by presenting how to implement the PUrDeG model for cultural heritage sites.

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References

- Aksoy, A. & Enlil, Z. (2012) Kültürel miras yönetiminde çağdaş yaklaşımlar. In: Aksoy, A. & Ünsal, D. (eds.) *Kültürel miras yönetimi*, pp. 3–28. Eskişehir, Anadolu Üniversitesi Web-Ofset.
- B&NESC (2005) = Bath & North East Somerset Council (2005) *Street-scape manual*. Available at: http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/SPDs/streetscape_manual_adopted.pdf (accessed 27 Feb. 2017).
- B&NESC (2007) = Bath & North East Somerset Council (2007) *Statement of community involvement*. Available at: <http://www.bathnes.gov.uk/sites/default/files/sitedocuments/Planning-and-Building-Control/Planning-Policy/LDFGeneral/StatementofCommunityInvolvement-Adopted-Document.pdf> (accessed 27 Feb. 2017).
- B&NESC (2013) = Bath & North East Somerset Council (2013) *City of Bath World Heritage Site setting*. Available at: https://www.bathworld-heritage.org.uk/sites/world_heritage_site/files/heritage/World%20Heritage%20Site%20Setting%20Supplementary%20Planning%20Document.pdf (accessed 27 Feb. 2017).
- B&NESC (2015) = Bath & North East Somerset Council (2015) *Bath Pattern book: Volume 01, Public realm framework*. Available at: <http://www.bathnes.gov.uk/services/planning-and-building-control/major-projects/public-realm-and-movement/preparatory-projects> (accessed 27 Feb. 2017).
- B&NESC (2018) = Bath & North East Somerset Council (2018) *Supplementary planning documents (SPDs) and other useful guidance*. Available at: <http://www.bathnes.gov.uk/services/planning-and-building-control/planning-policy/supplementary-planning-documents-spds> (accessed 19 Jul. 2018).
- Brombach, K., Simon-Philipp, C. & Kurth, D. (2013) District centre regeneration – A European perspective. *Proceedings of the Institution of Civil Engineers Urban Design and Planning*, 166(DP4), pp. 229–240. DOI: 10.1680/udap.11.00007
- Bursa Site Management Unit (2013) *Bursa and Cumalıkızık: the Birth of the Ottoman Empire*. Bursa, Bursa Metropolitan Municipality. Available at: <http://alanbakanligi.bursa.bel.tr/wp-content/uploads/unesco-adaylik-dosyasi-ve-ekleri-ingilizce-icin-tiklayiniz.pdf> (accessed 19 Jul. 2018).
- Carmona, M. (2009) Sustainable urban design: Definitions and delivery. *International Journal for Sustainable Development*, 12(1), pp. 48–77.
- Carmona, M. (2011) Decoding design guidance. In: Banerjee, T. & Loukaitou-Sideris, A. (eds.) *Companion to Urban Design*, pp. 288–303. London, Routledge.
- Carmona, M. (2017) The formal and informal tools of design governance. *Journal of Urban Design*, 22 (1), pp. 1–36. DOI: 10.1080/13574809.2016.1234338
- CEC (2003) = The City of Edinburgh Council (2003) *The Edinburgh standards for urban design*. Edinburgh. The City Development Department, Planning & Strategy.
- CEC (2015) = The City of Edinburgh Council (2015) *Edinburgh street design guidance consultation report*.
- CEC (2018a) = The City of Edinburgh Council (2018a) *Supplementary guidance*. Available at: http://www.edinburgh.gov.uk/info/20013/planning_and_building/64/supplementary_guidance (accessed 27 Feb. 2017).
- CEC (2018b) = The City of Edinburgh Council (2018b) *Edinburgh design guidance*. Available at: http://www.edinburgh.gov.uk/downloads/file/11650/edg_amended_october_2018 (accessed 28 Aug. 2018).
- CEC (2018c) = The City of Edinburgh Council (2018c) *Edinburgh street design guidance*. Available at: http://www.edinburgh.gov.uk/downloads/download/550/edinburgh_street_design_guidance (accessed 28 Aug. 2018).
- CEC (2019) = The City of Edinburgh Council (2019) *Listed buildings and conservation areas*. Available at: http://www.edinburgh.gov.uk/downloads/file/4510/listed_buildings_and_conservation_areas (accessed 28 Aug. 2018).
- Commission for Architecture & the Built Environment (2003) *The councillor's guide to urban design*. Available at: <http://www.designcouncil.org.uk/sites/default/files/asset/document/councillors-guide-to-urban-design.pdf> (accessed 2 Nov. 2017).
- Cowan, R. (2002) *Urban design guidance: Urban design frameworks, development briefs and master plans*. London, Thomas Telford Ltd. DOI: 10.1680/udg.31357
- DETR & CABE (2000) = Department of the Environment, Transport and the Regions & Commission for Architecture and the Built Environment (2000) *By design, urban design in the planning system: Towards better practice*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7665/158490.pdf (accessed 27 Feb. 2017).
- Elnokaly, A. & Elseragy, A. (2013) Sustainable heritage development: Learning from urban conservation of heritage projects in non western contexts. *European Journal of Sustainable Development*, 2, pp. 31–54. DOI: 10.14207/ejsd.2013.v2n1p31

Hassler, U., Algreen-Using, G. & Kohler, N. (2002) *Cultural heritage and sustainable development in SUI/T*. SUI/T position paper (3). Available at: http://www.lema.ulg.ac.be/research/suit/download/SUIT5.2c_PPaper.pdf (accessed 12 Nov. 2017).

ICOMOS (2005) *Threats to world heritage sites 1994–2004: An analysis*. Available at: https://www.icomos.org/world_heritage/Analysis%20of%20Threats%201994-2004%20final.pdf (accessed 12 Nov. 2017).

Križnik, B. (2018) Transformation of deprived urban areas and social sustainability: A comparative study of urban regeneration and urban redevelopment in Barcelona and Seoul. *Urbani izziv*, 29(1), pp. 83–95. DOI: 10.5379/urbani-izziv-en-2018-29-01-003

Lang, J. (1996) Implementing urban design in America: Project types and methodological implications. *Journal of Urban Design*, 1(1), pp. 7–22. DOI: 10.1080/13574809608724368

LCC (2009) = Liverpool City Council (2009) *Liverpool maritime mercantile city world heritage site supplementary planning document*. Available at: <http://liverpool.gov.uk/media/9644/world-heritage-site-spd.pdf> (accessed 27 Feb. 2017).

LCC (2013) = Liverpool City Council (2013) *Liverpool statement of community involvement*. Available at: <https://liverpool.gov.uk/council/strategies-plans-and-policies/environment-and-planning/plan-making-in-liverpool/statement-of-community-involvement/> (accessed 27 Feb. 2017).

Madanipour, A. (1996) *Design of urban space: An inquiry into a socio-spatial process*. Chichester, John Wiley and Sons Ltd.

Ministry of Environment and Urbanization (2015) *Çevre ve şehircilik Bakanlığınca onaylanacak kentsel tasarım projelerinin hazırlanmasına ve değerlendirilmesine ilişkin yönerge*. Available at: <https://kms.kaysis.gov.tr/Home/Goster/131263> (accessed 28 Aug. 2019).

Ministry of Environment and Urbanization & Mimar Sinan Fine Arts University (2016) *Kentsel tasarım rehberleri cilt 1*. Available at: http://webdosya.csb.gov.tr/db/mpgm/eduardosya/file/Kentsel%20Tasarim/Kentsel%20Tasarim%20Rehberleri/KENTSEL%20TASARIM%20REHBERLERI_Cilt1.pdf (accessed 27 Feb. 2017).

MPWS (2010) = Ministry of Public Works and Settlements (2010) *Bütünleşik kentsel gelişme stratejisi ve eylem planı. (KENTGES)* Available at: https://webdosya.csb.gov.tr/db/kentges/eduardosya/kentges_tr.pdf (accessed 28 Aug. 2019).

Nasser, N. (2003) Planning for urban heritage places: Reconciling conservation, tourism, and sustainable development. *Journal of Planning Literature*, 17(4), pp. 467–479. DOI: 10.1177/0885412203017004001

Özcan, K. (2009) Sürdürülebilir kentsel korumanın olabilirliği üzerine bir yaklaşım önerisi: Konya tarihi kent merkezi örneği. *ODTÜ Mimarlık Fakültesi Dergisi*, 26(2), pp. 1–18. DOI: 10.4305/metufja.2009.2.1

Polat, S., Tümer Yıldız, H. Ö. & Dostoğlu, N. (2018) A user-oriented urban design guide model for cultural heritage sites: The case of Bursa Khans area. *Megaron*, 13(4), pp. 584–596. DOI: 10.5505/megaron.2018.32043

Punter, J. (2007) Developing urban design as public policy: Best practice principles for design review and development management. *Journal of Urban Design*, 12(2), pp. 167–202. DOI: 10.1080/13574800701306195

Rezafar, A. & Turk, S. S. (2018) Urban design factors involved in the aesthetic assessment of newly built environments and their incorporation into legislation: The case of Istanbul. *Urbani izziv* 29(2), pp. 83–95. DOI: 10.5379/urbani-izziv-en-2018-29-02-002

Royal Town Planning Institute & Consultation Institute (2005) *Guidelines on effective community involvement and consultation*. Available at: <http://www.rtpi.org.uk/media/6313/Guidelines-on-effective-community-involvement.pdf> (accessed 27 Feb. 2017).

The Scottish Government (2010) *Planning advice note 3/2010: Community engagement*. Available at: <http://www.gov.scot/Publications/2010/08/30094454/12> (accessed 27 Feb. 2017).

Tiesdell, S., Oc, T. & Heath, T. (1996) *Revitalizing historic urban quarters*. London, Butterworth-Heinemann.

Van Oers, R. (2010) Managing cities and the historic urban landscape initiative – An introduction.. In: Van Oers, R. & Haraguchi, S. (eds.) *Managing Historic Cities; World Heritage Papers*, 27, pp. 7–17. Paris, World Heritage Centre. Available at: http://whc.unesco.org/documents/publi_wh_papers_27_en.pdf (accessed 10 Apr. 2017).

Von Hausen, M. A. (2013) *Dynamic urban design*. Bloomington, IN, iUniverse.

Yeang, L. D. (2000) *Urban design compendium*. Available at: <http://www.queenelizabetholympicpark.co.uk/-/media/lldc/local-plan/local-plan-examination-documents/other-strategy-papers/s34-urban-design-compendium.ashx?la=en> (accessed 27 Feb. 2017).

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Bojan GRUM

Differences in perceptions of the living environment by respondent age

This article explores whether potential statistically significant differences in terms of respondents' demographic characteristics (i.e., age) can point to intergenerational differences in perceptions of the living environment. A quantitative methodology was used. Older respondents reported higher satisfaction, a stronger feeling of socio-economic homogeneity of the neighbourhood, better neighbourly relations, and more positive opinions on the maintenance of the built environment than did younger respondents. In turn, younger respondents expressed a higher level of agreement about vandalism and physical and verbal attacks in the neighbourhood. These results were unexpected because previous studies showed significantly lower levels of agreement regarding satisfaction with the built environment and significantly higher levels of agreement about crime among older respondents than younger ones. They can be explained by the findings of

many researchers, who established that the elderly generally still prefer to grow old at home – that is, in the environment they are familiar with, because they are often afraid that moving to an eldercare facility would inevitably cause them to lose their independence. Therefore, they tend to accept the environment where they live the way it is. On the other hand, the article shows that a series of statistically significant differences established indicates that the living environment, which has a strong impact on people's satisfaction and wellbeing, nonetheless does not offer the same quality of the built social infrastructure to all users (i.e., users with different demographic characteristics).

Keywords: social infrastructure, built environment, demographic characteristics, older respondents, Slovenia

1 Introduction

Quality of life, which is a dominant concept around the globe today, can be difficult to imagine without the concept of the quality of the urban environment, the design of which tends to be increasingly human-oriented (Temeljotov Salaj & Petrič, 2009). As a term, the quality of the urban environment is conceived as an integral whole that encompasses the social perceptions of this environment (i.e., the neighbourhood) and the quality of the built living environment itself, which should satisfy all users. According to Adriaanse (2007), there are three “iron variables” influencing the quality of the urban environment: age, residential community characteristics, and physical characteristics of the built environment. It focuses on whether there are any statistically significant differences by respondent age in perceptions of residential community characteristics (general satisfaction, socioeconomic homogeneity, neighbourly relations, crime rate, fear and discomfort, and help among neighbours) and the characteristics of the built environment (development, maintenance, and cleanliness). The article also explores whether there are any statistically significant differences among respondents that might indicate significant intergenerational differences in perceptions of the built environment or, more broadly, perceptions of the built social infrastructure they live in.

The degree of development of a place influences its users' feeling of satisfaction and needs in that place (Missimer et al., 2017; Sierra et al., 2017, 2018). Many authors, including Baumeister and Leary (1995) and Engle and Altschuld (2014), highlight the fact that needs must be first taken into account because they influence thinking, emotions, and behaviour under any conditions; if they are not satisfied, negative effects must be taken into account. When needs are not satisfied, their objective importance should increase or decrease. Researchers have also stressed that attention should be paid to everyone's common needs. According to Kulbickienė (2004), needs reflect residents' orientations and choices. Therefore, an analysis of social infrastructure needs is conceived as an evaluation of the demand for services and facilities (Weber et al., 2016). A definition of needs refers to describing “problems” of the target population and possible solutions (Vaznonienė & Pakeltienė, 2017). Hence, an analysis of needs focuses on the future, or on what must be done rather than what has been done (Vaznonienė & Pakeltienė, 2017).

This article understands built social infrastructure as a structure that has been built based on users' needs and that is measured by the level of user satisfaction (wellbeing). Built social infrastructure is a predominant factor that ensures that basic human needs are satisfied (Frolova et al., 2016). If a current

social infrastructure meets a community's needs and expectations, its residents achieve a higher quality of life. If social infrastructure fails to satisfy residents' needs or create choice, special social and economic issues develop and affect the community's wellbeing (Vaznonienė, 2015). Wellbeing reflects the quality of life. There is a lack of studies exploring the relationship between the factors influencing a population's wellbeing and the level of social infrastructure development within a community (or country). A similar study was conducted by Popov (2017), who examined the relationship between transport infrastructure and wellbeing factors using a correlation analysis based on data provided by the Latvian Statistical Office. Popov's study opens a wide area for further detailed research, and it also encouraged the author of this article to conduct a detailed analysis of individual factors within a community (in the sense of users' perceptions) and the built environment by basic demographic characteristics of the respondents. As the input demographic factor, the author distinguishes between three age groups or generations based on the classification by Milošević Arnold (2003): younger than thirty-five, thirty-five to sixty-five, and older than sixty-five. The elderly are treated as a single group above sixty-five. This age limit (i.e., sixty-five) is also used by the Slovenian Statistical Office.

2 Perceptions of the built environment

Erdogan et al. (2008) argue that perceived living conditions directly influence overall housing satisfaction and that they are connected with satisfaction with the physical environment, social relations, the operation of local authorities, and perceived quality of the environment and facilities. Residents' opinions about their neighbourhood provide important insights into this issue. According to Adriaanse (2007), these opinions shed light on the aspects that have a greater impact on overall residential environment satisfaction. To some extent, residential environments can be defined through objective criteria, such as the period of construction, architectural style, spatial structure, the quantity of green areas, and geographical location. With regard to neighbourhood satisfaction, Sirgy and Cornwell (2002) divide various neighbourhood attributes affecting satisfaction into physical features (e.g., upkeep of homes and yards, landscape and street lighting, crowding and noise level, nearness to facilities, and quality of the environment), social features (social interaction with neighbours, ties with people in the community, outdoor play space, crime, and sense of privacy at home), and economic features (home value in the neighbourhood, cost of living, socioeconomic status of the neighbourhood, and neighbourhood improvement). Several other authors have also established that housing satisfaction is influenced by a wide range of objectively and subjectively perceived

conditions (Theodori, 2001; Grum & Temeljotov Salaj, 2013; Grum & Kobal Grum, 2015). Urban planners ascribe great importance to social issues and quality of life, which suggests that housing is a social issue that entails not only its construction and environment, but also satisfaction with the quality of its environment (Sam et al., 2012). Architects agree with urban planners that this consequently impacts residents' quality of life and psychosocial aspects (Mohit et al., 2010). Researchers argue that residential satisfaction reflects the satisfaction and happiness in the residential area or neighbourhood (Sam et al., 2012). This includes social and neighbourly relations, social activities, social facilities, scenery, and utilities (Sam et al., 2012). In addition to satisfaction, socioeconomic homogeneity, and the related stability of the neighbourhood, a sense of safety is also important; many studies link this to the crime rate in the environment (Newman, 1972, Meško, 2001; Grum, 2017). According to Meško (2001), spatial design should provide a structure that discourages crime – that is, the external features of the environment should be based on properties that show that the environment is under control, and as such it should create a sense of safety in people. Such a neighbourhood stimulates greater concern for the environment, more contact with neighbours (good neighbourly relations), and more help among neighbours, and its residents are also more satisfied with their homes (Grum, 2017). Newman (1972) combines these factors into territoriality (a sense of belonging to the neighbourhood), natural surveillance (perception of socioeconomic homogeneity, and the presence of police, security services, and firefighters), image and milieu (maintenance, parks, parking areas, and walking trails), and the environment (the development of built social infrastructure).

With regard to respondent age, many studies show that the elderly want to stay in their homes (i.e., the environment they are familiar with) as long as they can and to retain their independence and autonomy as long as possible (Rojo et al., 2001; Sabia, 2008; Costa Font et al., 2009; Wiles et al., 2009). Roy et al. (2018) report that relocations among the elderly are significantly influenced by factors connected with the built environment and factors connected with the social, psychological, psychosocial, spatiotemporal, and decision-making context. In general, the elderly still prefer to grow old at home (Harper & Bayer, 2000; Greenwald et al., 2003; Secker et al., 2003; Wylde, 2008), often because they are afraid that moving to an eldercare facility would inevitably cause them to lose their independence (Parry et al., 2004; Imamoglu, 2007). The space that refers to the elderly's relationship with their living environment, as a symbolic representation of "home" as one's independence (Parry et al., 2004), can form the basis for further conceptual improvements (Kemp et al., 2012). However, many studies show that a poorly maintained built environment can prevent physical activity among the elderly

(Balfour & Kaplan, 2002; Strath et al., 2007; Mendes de Leon et al., 2009; Gallagher et al., 2010). Therefore, the elderly are especially responsive to specific aspects of the built environment (Grum, 2017). Many studies indicate the effect of certain demographic factors, such as residents' age, on the degree of fear expressed and the interaction between the respondents' social structure and their experience of fear (Ferguson & Mindel, 2007). A sense of community can help people have greater faith in their own abilities, which reduces their feeling that they might be victimized and their fear (Meško et al., 2012). On the other hand, younger participants can perceive the built environment and relationships within it differently. Uršič (2005) studied Ljubljana's Sava housing development (Sln. *Savsko naselje*) to establish whether factors such as the neighbourhood's age, poor maintenance, and the resulting poorer quality of life in the neighbourhood cause certain population groups to move elsewhere and the lack of social homogeneity and stability to increase. He determined that over a fifth of the residents planned to move in the near future, and that these primarily involved younger residents (i.e., below forty).

The elements of the built environment affect user behaviour. If the living environment is well maintained and clean, it is expected that individual residential buildings within it are also well maintained and in harmony with the neighbourhood and the built environment they are located in (Grum, 2017). However, the environment usually influences the level of expected (or required) maintenance of buildings (well-maintained infrastructure usually requires well-maintained accommodation capacities, otherwise the feel of the neighbourhood is not uniform and users' wellbeing is poorer; Grum, 2017). The summarised findings of the literature review provided guidance for designing the questionnaire.

3 Methodology

Studies of the living environment have been conducted for a long time, but, as already established by Smrke et al. (2018), no systematic overview of questionnaires used in these kinds of studies has been published in Slovenia to date. Smrke et al. (2018) argue that researchers should lean more towards using questionnaires already developed, but they agree that there are not many questionnaires in this area of research with established validity. Hence, the methodology used in this article is based on a quantitative approach: specifically, a questionnaire that was designed in line with findings from the literature (Grum & Temeljotov Salaj, 2011). The research questions that arise in studying the quality of the urban living environment or the degree of user satisfaction and needs, now largely rely on multidisciplinary research approaches, which in

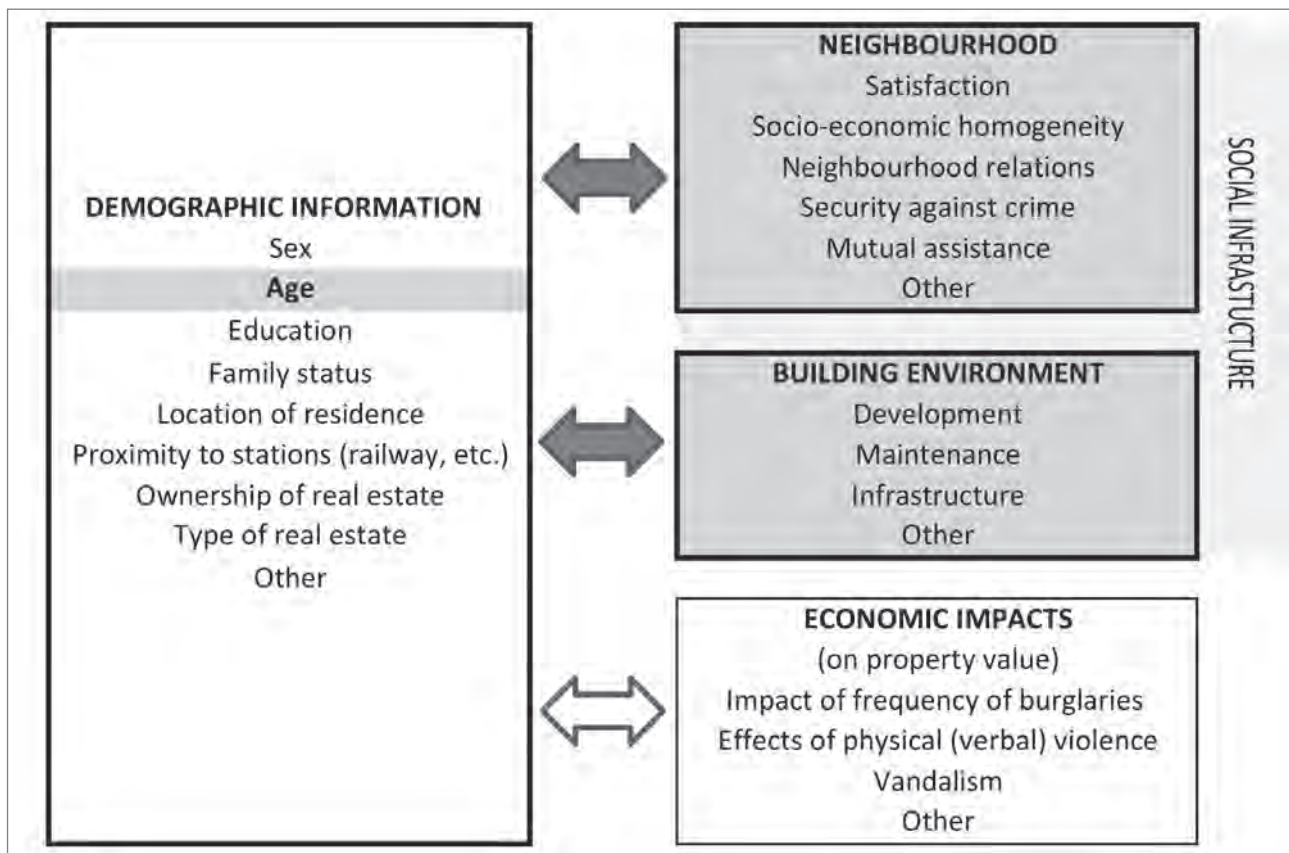


Figure 1: Identified factors, among which the correlation between the demographic data (age), the neighbourhood, and the built environment was of main interest in the remainder of the study (illustration: author).

and of itself repeatedly raises new questions. Thus, unexplored research areas are opening that high-quality measurement instruments do not always keep pace with. However, certain contradictory findings in studying living environment satisfaction and numerous evaluation-related questions that remain open are not merely the result of inadequate methodological approaches. The author agrees that the method of measuring living environment satisfaction is important in empirical analyses, especially in new studies (like the one presented here), which may provide important answers to research questions, either in terms of eliminating any such influences on the results obtained or confirming repeatable and tested methodology or measurement instruments.

The cognitive objectives of the study are descriptive (i.e., a description of features and current state) and explanatory (i.e., identifying and explaining interdependencies). The results of the current literature review above form the operationalization basis. The study was designed in two stages (Grum & Temeljotov Salaj, 2011). In the first stage, a questionnaire was developed and the suitability of its metric characteristics was established. To this end, a pilot study was performed on an appropriate sample ($n = 55$). The data were collected through an online survey conducted in 2018. A structured and closed-type questionnaire was used. SPSS software was used to process

the data collected. Respondents provided their answers using a five-point Likert scale (1 = completely disagree, 5 = completely agree). The questionnaire contained twenty-six questions. An exploratory factor analysis was conducted, which means the correlations between variables were studied by identifying a set of latent variables (fewer than measured variables) underlying the battery of measured variables. Orthogonal rotation was applied to identify theoretically important factors and the simplest possible factor structure. Key concepts cannot be directly measured; instead, they are measured indirectly using indicators of that which is supposed to be measured. In line with literature, several directly measurable variables that serve as indicators of the concept (construct) to be measured are selected, after which it is established whether the relationships between the selected observed variables can be explained with the proposed latent variable or whether a more complex correlation structure may have to be built. The goal is to establish whether the correlations between observed variables can be explained with a smaller number of directly observed variables or factors. The factor analysis thus identified four factors that explain over 63.88% of variation, which is above the required minimum of 60% (Bastič, 2006). The factors identified overlap with factors that were grouped in the questionnaire. Questions related to social structure variables and describing the neighbourhood features as perceived by residents (e.g., satisfaction,

Table 1: The results of variance analysis

Variable		SS	df	MS	F	<i>p</i>
Infrastructure (police, fire brigade, etc.)	*	12.26	4	3.064	2.473	0.043
Home satisfaction		1.54	4	0.385	0.370	0.830
Socioeconomic homogeneity		2.95	4	0.737	1.088	0.362
Neighbourly relations	*	6.46	4	1.615	2.285	0.050
Frequency of crime	*	31.30	4	7.825	2.489	0.042
General feeling of fear		10.12	4	2.530	1.470	0.209
Mutual help		1.42	4	0.355	0.465	0.762
Development of built environment	*	13.39	4	3.348	3.055	0.016
Maintenance of built environment		4.44	4	1.109	1.402	0.232

*Statistically significant difference ($p < 0.05$)

**Statistically significant difference ($p < 0.01$)

***Statistically significant difference ($p < 0.001$)

socioeconomic homogeneity, neighbourly relations, crime safety, mutual help, etc.) were heavily saturated with the first factor (18.15%). Questions referring to economic effects on real-estate value (e.g., impact of frequent break-ins, physical or verbal violence, vandalism, etc.) were heavily saturated with the second factor (17.07%). Questions related to the built environment (e.g., infrastructure development, maintenance, etc.) were heavily saturated with the third factor (14.97%). The factor analysis placed the variable “neighbourhood cleanliness” under a separate factor (14.67%), but strong correlations with the built environment variables (e.g., the negative correlation between good maintenance and poor cleanliness was -0.55) were evident, which is why this variable was theoretically categorized under built environment variables and is not addressed below. Thus, this article addresses three factors key to the study. The factors identified are shown in Figure 1, which also highlights the main interests of the study and the subject of further analyses.

The appropriateness of using a factor analysis was tested with Bartlett’s Test of Sphericity ($BT = 759.61$), whose high statistical reliability implied that it was possible to interpret the factors identified (Fulgosi, 1984). A high value of this measure supports the use of this method (Bastič, 2006). In addition to Bartlett’s test, the Kaiser–Meyer–Olkin Test ($KMO = 0.563$) was also applied. Using factor analysis makes sense if the value of this measure is high – that is, over 0.5 (Bastič, 2006). The reliability of the questionnaire was tested using Cronbach’s alpha (a measure of internal consistency). The value of alpha varies from 0 to 1 and the reliability is acceptable if the coefficient is greater than 0.60 (Bastič, 2006). Its value for the entire questionnaire was 0.603. Cronbach’s alpha for the first social infrastructure factor identified (i.e., neighbourhood) was 0.64, for the second social infrastructure factor identified (built environment) it was 0.66, and for the third factor identified (economic effects) it was 0.62.

The second stage comprised the central cross-sectional study. The questionnaire designed as part of the pilot study was used, applying snowball sampling for collecting data (Lobe, 2006). With this sampling technique, personal contacts are used to build the research sample group. A smaller sample of individuals is first selected; they complete the questionnaire and at the same time invite their acquaintances to do the same (Klinc et al., 2010). Each subsequent respondent is expected to provide a few more. The advantage of this sampling technique primarily lies in the fact that the original sample is expanded quickly, which in turn depends exclusively on the selection of the initial population. This is also its weakness, because after the initial selection of the sample the researcher no longer has any control over it. The survey included 729 respondents, of whom 250 were younger than thirty-five (34.29%), 362 were between thirty-five and sixty-five (49.66%), and 117 were older than sixty-five (16.05%). In terms of employment, twelve respondents were unemployed (1.65%), 188 were students (25.79%), 431 were employed (59.12%), and ninety-eight were retired (13.4%). Respondents were fairly evenly represented in terms of sex: there were 376 women (51.60%) and 353 men (48.40%).

The focus was on which statistically significant differences by respondent age refer to the neighbourhood itself (the community) and which to the built environment (i.e., built social infrastructure).

4 Results

Based on a strong correlation between age and employment status (Pearson’s correlation coefficient $r = 0.57$), the data were first analysed by age and employment using a multivariate analysis of variance (MANOVA; see Table 1). This made it possible to examine whether such analysis showed different statistically

Table 2: ANOVA results by respondent age and built social infrastructure.

Variable		SS	df	MS	F	<i>p</i>
Infrastructure (police, fire brigade, etc.)	*	7.37	2	3.687	2.875	0.050
Home satisfaction	**	14.16	2	7.081	6.805	0.001
Socioeconomic homogeneity	**	9.51	2	4.757	7.017	0.001
Neighbourly relations	***	11.23	2	5.615	7.946	0.000
Frequency of crime		0.13	2	0.063	0.020	0.980
General feeling of fear		0.90	2	0.449	0.261	0.770
Mutual help		3.62	2	1.809	2.366	0.095
Development of built environment	*	9.19	2	4.596	4.193	0.015
Maintenance of built environment	***	12.69	2	6.347	8.025	0.000

*Statistically significant difference ($p < 0.05$)

**Statistically significant difference ($p < 0.01$)

***Statistically significant difference ($p < 0.001$)

significant differences in the observed variables than the ones obtained through a one-way analysis of variance (ANOVA). This would indicate that employment had a significant impact on the results.

Statistically significant differences ($p < 0.01$) by age and employment status were shown in relation to the importance of infrastructure development (connected with the presence of police and fire stations, security services, etc.), the neighbourhood's socioeconomic homogeneity, neighbourly relations, the frequency of crime (break-ins, thefts, vandalism, and physical and verbal attacks), and the development of the built environment. The results showed an equal distribution of statistically significant differences between the two factors observed: two within the first factor (neighbourhood) and two within the second one (built environment). The data were also analysed by age using a one-sided analysis of variance (ANOVA), the results of which are presented in Table 2.

Statistically significant differences ($p < 0.01$) by age and general features of the built environment were shown in relation to the importance of infrastructure development connected with the presence of the police and fire stations, security services, and so on, home satisfaction, the neighbourhood's socioeconomic homogeneity, neighbourly relations, the development of the built environment, and its maintenance. The results showed an uneven distribution of statistically significant differences between the two factors observed: four within the first factor (neighbourhood) and only two within the second one (built environment).

Table 3 shows the average values of respondent agreement in terms of the statistically significant differences presented in Tables 1 and 2. The results show a fairly even distribution of statistically significant differences between the two factors

observed. Based on this, it can be concluded that employment itself does not have a significant impact on the results sought, even though it correlates with age. Thus, four statistically significant differences were established within the first factor (neighbourhood) and three within the second one (built environment). The statistically significant differences within the two factors observed thus indicate that the most important factor among those identified in the factor analysis is neighbourhood, inside which statistically significant differences can be observed with the majority of the variables observed.

Younger respondents showed a significantly higher level of agreement regarding the proximity of infrastructure (i.e. the police, firefighters, and security services) than older respondents ($M = 3.423$). This means that older respondents perceive this type of infrastructure as being further from their home than do younger respondents. With regard to satisfaction with their current home, older respondents showed a significantly higher level of agreement than younger respondents ($M = 4.058$). In terms of feeling that their neighbourhood is socioeconomically homogenous and consequently stable, older respondents expressed a significantly higher level of agreement than younger ones ($M = 3.758$). Older respondents also showed a markedly higher level of agreement about good neighbourly relations ($M = 3.717$). The results thus demonstrate that older respondents show strong satisfaction with their living environment. The importance of this was also confirmed by Ramovš (2000), who established that interpersonal relations are just as important as financial security. According to Kobal Grum and Grum (2018), exclusion from the social environment causes loneliness, isolation, a feeling of insecurity, and loss of a sense of purpose in life, and therefore it is crucial to support the elderly in their integration into the social environment. The results can be partially explained through the findings of Filipovič et al. (2005), who established that in Slovenia the

Table 3: Average values of respondent agreement in terms of home satisfaction and age.

Variable		Number of participants N	Medium M	Std. diviation SD	Std. error medium SEM	Confidence interval average	
						Lower limit	Upper limit
Infrastructure (police, fire brigade, etc.)	1	258	3.423	1.038	0.065	3.295	0.360
	2	376	2.926	1.155	0.060	2.808	3.043
	3	89	3.098	1.247	0.131	2.625	3.150
Home satisfaction	1	260	3.842	0.889	0.055	3.734	3.951
	2	380	3.918	1.107	0.057	3.807	4.030
	3	85	4.059	1.062	0.115	3.830	4.288
Socioeconomic homogeneity	1	258	3.636	0.778	0.048	3.540	3.731
	2	378	3.661	0.863	0.044	3.574	3.749
	3	87	3.759	0.876	0.094	3.572	3.945
Neighbourly relations	1	260	3.592	0.898	0.056	3.483	3.702
	2	380	3.663	0.833	0.043	3.579	3.747
	3	85	3.718	0.781	0.085	3.549	3.886
Frequency of crime	1	260	2.988	1.671	0.104	2.784	3.192
	2	378	2.854	1.883	0.097	2.664	3.045
	3	87	2.241	1.635	0.175	1.893	2.590
Development of built environment	1	258	3.372	1.044	0.065	3.244	3.500
	2	380	3.258	1.081	0.055	3.149	3.367
	3	87	3.299	0.966	0.104	3.093	3.505
Maintenance of built environment	1	258	3.457	0.851	0.053	3.353	3.562
	2	378	3.402	0.914	0.047	3.310	3.495
	3	87	3.586	0.909	0.097	3.392	3.780

Note: 1 – younger than 35, 2 – younger than 65, 3 – older than 65.

importance of neighbours in all types of support increased with respondent age. However, it is interesting that with regard to crime in the neighbourhood older respondents showed a higher level of agreement about break-ins and theft (e.g., stolen purses or wallets on buses; $M = 3.717$), whereas younger respondents expressed a higher level of agreement about vandalism and physical and verbal attacks ($M = 2.988$). This can be confirmed by the findings of Meško et al. (2012), who reported that young people are the least afraid of crime, even though they are the ones that are most frequently victimized. A sense of community may help people develop greater faith in their own abilities, which reduces their feeling that they might be victimized and their fear (Meško et al., 2012). It is also interesting that the highest level of agreement about the development of the built environment (facilities, parking areas, parks, walking trails, etc.) was evident among young respondents ($M = 3.372$), followed by the elderly ($M = 3.298$). Middle-aged respondents showed the lowest level of agreement ($M = 3.257$),

which means that the middle-aged generation is the least satisfied with the development of the built environment. This can also be explained by the results of the study conducted by Trček (2005), who performed a detailed analysis of factors such as age, building and housing quality, neighbourly relations, and future respondent preferences. With regard to living environment dissatisfaction, he established that the greatest problem was parking areas (dissatisfaction expressed by 60.2% of respondents), whereas respondents expressed a high level of satisfaction with neighbourhood safety (52.7%) and neighbourly relations (56.9%). Parking areas probably concern the middle-aged or active working generation significantly more than the elderly, who are considerably less mobile on a daily basis. However, older respondents showed a significantly higher level of agreement about the maintenance of the building environment (derelict buildings, dark and unlighted passageways and walking trails, unmaintained parks, fallen trees, etc.) than younger ones ($M = 3.586$), which is surprising. The elderly

were expected to show significantly lower levels of agreement, especially about the maintenance of the built environment. On the contrary, the results showed that, compared to younger respondents, in general the elderly are considerably more satisfied with both the characteristics of the residential community and the physical characteristics of the built environment. These results can be explained by the findings of many researchers, who established that in general the elderly still prefer to grow old at home or in the environment they are familiar with and accept because they are often afraid that moving to an eldercare facility would inevitably cause them to lose their independence. Kobal Grum and Grum (2018) highlight the fact that neighbour networks constitute an important part of people's personal network. Hence, it can be concluded that satisfaction with one's home or residential factors referring to a potential home or living environment (neighbourhood) also requires a high or optimal level of emotional wellbeing (Kobal Grum & Grum, 2018). In addition, the results obtained can also be compared to the results of exploring a relatively new phenomenon in home-related psychological factors: attachment or place attachment (Khozaei et al., 2012). Thus, attachment, as a well-known and fairly well-studied phenomenon in psychology (Howe, 2011), is acquiring a new dimension through studying users' attitude towards places. It seems that people that find it important in what infrastructural environment they live or would like to live also exhibit constructive place attachment through higher subjective emotional wellbeing (Florek, 2011). Such findings can have a key impact on creating a successful intergenerational housing policy. Population aging is not a process that societies should prevent, but a process that should be understood as a result and consequence of planned or desired processes and one that also requires appropriate adaptation of social institutions and services (Kerbler, 2011). A high-quality living environment is accompanied by good spatial relations only when these also make it possible to fulfil as many needs of residents as possible (Zapušek & Kučan, 2009). However, these interests or needs change with age and social position.

5 Conclusion

Different types of neighbourhoods have different characteristics and can thus reflect different problems among their users. This article proceeds from the three variables established by Adriaanse (2007): age, residential community characteristics, and physical characteristics of the built environment. It thus focuses on determining whether there are any statistically significant differences by respondent age in relation to residential community characteristics (general satisfaction, socio-economic homogeneity, neighbourly relations, crime rate, feeling of fear and discomfort, and help among neighbours) and the built environment (development, maintenance, and

cleanliness). The article also explores whether any statistically significant differences perceived by respondents can point to intergenerational differences in the perception of the living environment or, more broadly, the perception of the built social infrastructure they live in.

The elderly were expected to show significantly lower levels of agreement, especially about the maintenance of the built environment. On the contrary, the results showed that, compared to younger respondents, in general the elderly are considerably more satisfied with both the characteristics of the residential community and the physical characteristics of the built environment. These results can be explained by the findings of many researchers, who established that in general the elderly still prefer to grow old at home or in the environment they are familiar with and accept because they are often afraid that that moving to an eldercare facility would inevitably cause them to lose their independence. Within this context, they uncritically "defend" their living environment regardless of their deficiencies because, no longer being economically involved in the society (retired or having limited income), they no longer feel socially active in the sense of having any major influence on remedying these deficiencies. As established by Pain (2000), researchers have lately been increasingly viewing age as a cultural category and no longer a chronological one, which means they focus on the special features of the circumstances and lifestyles of people at various stages of life.

The results of this study indicate a series of statistically significant differences by respondent age (intergenerational gaps). The statistically significant differences within the factors observed (the neighbourhood and the built environment) show that among all the factors identified in the factor analysis neighbourhood is the most important. Inside which statistically significant differences can be observed with the majority of the variables observed. The study shows that living environment has a strong impact on residential satisfaction and wellbeing. In line with many other authors (e.g., Adriaanse, 2007; Kobal Grum & Grum, 2018), it can be concluded that most urban planners and designers have not made any breakthrough in designing neighbourhoods, in which people of all generations should live comfortably and use residential social infrastructure of the highest possible quality regardless of age differences. According to Sendi (2005), modern times require a modern perspective on planning residential areas. Planning that does not take account of the opinions and desires of current or potential residents is no longer acceptable, no longer works, and no longer leads to optimal land use. Both in spatial planning – where the central question is still how to ensure appropriate land use that will accord with the goals and orientations of social development and where all actors appear as equal partners (Ravbar, 2007) – and in planning residential

areas, the central question that remains is how to utilize residential use to achieve optimal land use. Optimal land use can be understood as an expanded definition of most economical land use, one that is also supported by people's expectations, desires, aspirations, and so on. These findings are primarily important for evaluating the quality of life, which is a dominant concept around the world today and is difficult to imagine without the concept of quality of the urban environment. The quality of measurement instruments should be improved in future studies in the sense of using or translating available foreign-language questionnaires. In addition, the findings established show that understanding the observed differences by the demographic characteristics of spatial users is key for designing a sustainable housing policy.

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References

- Adriaanse, C. C. M. (2007) Measuring residential satisfaction: a residential environmental satisfaction scale (RESS). *Journal Housing Built Environment*, 22, pp. 287–304. DOI: 10.1007/s10901-007-9082-9
- Balfour, J. L. & Kaplan, G. J. (2002) Neighborhood environment and loss of physical function in older adults: Evidence from the Alameda county study. *American Journal of Epidemiology*, 155(6), pp. 507–515. DOI: 10.1093/aje/155.6.507
- Bastič, M. (2006) *Metode raziskovanja*. Maribor, Univerza v Mariboru, Ekonomsko poslovna fakulteta Maribor.
- Baumeister, R. F. & Leary, M. R. (1995) The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), pp. 497–529. DOI: 10.1037//0033-2909.117.3.497
- Costa-Font, J., Mascarilla-Miró, O. & Elvira, D. (2009) Ageing in place? An examination of elderly people housing preferences in Spain. *Urban studies*, 46(2), pp. 295–316. DOI: 10.1177/0042098008099356
- Engle, M. & Altschuld, J. W. (2014) Needs assessment: The perspective from the public sector. In: Altschuld, J.W. & R. Watkins (eds.) *Needs assessment: Trends and a view toward the future. New directions for Evaluation*, pp. 33–45. Hoboken, NJ. Wiley. DOI: 10.1002/ev.20101
- Erdogan, N., Akyol, A., Ataman, B. & Domkeci, V. (2008) Comparison of urban housing satisfaction in modern and traditional neighborhoods in Edirne, Turkey. *Social Indicators Research*, 81(1), pp. 127–148. DOI: 10.1007/s11205-006-0018-7
- Ferguson, K. M. & Mindel, C. H. (2007) Modeling fear of crime in Dallas neighborhoods: A Test of social capital theory. *Crime Delinquency*, 53(2), pp. 658–679. DOI: 10.1177/0011128705285039
- Filipovič Hrast, M., Kogovšek, T. & Hlebec, V. (2005) Starostniki in njihova vpetost v sosedstva omrežja. *Družboslovne razprave*, 49/50, pp. 205–221.
- Florek, M. (2011) No place like home: Perspectives on place attachment and impacts on city management. *Journal of Town & City Management*, 1(4), pp. 346–354.
- Frolova, E.V., Vinichenko, M. V., Kirillov, A. V., Rogach, O. V., & Kabanova E. E. (2016) Development of social infrastructure in the management practice of local authorities: Rends and factors. *International Journal of Environmental & Science Education*, 11(15), pp. 7421–7430.
- Fulgosi, A. (1984) *Faktorska analiza*. Zagreb, Filozofski fakultet v Zagrebu.
- Gallagher, N. A., Gretebeck, K. A., Robinson, J. C, Torres, E. R., Murphy, S. L. & Martyn, K. K. (2010) Neighborhood factors relevant for walking in older, urban, African American adults. *Journal of Aging and Physical Activity*, 18(1), pp. 99–115. DOI: 10.1123/japa.18.1.99
- Greenwald, M., Barrett, L. L., Ginzler, E., Copeland, A., Kochera, A. & Straight, A. (2003) *These four walls. Americans 45+ talk about home and community*. AARP, 601 E Street, NW Washington, DC 20049. Available at: http://assets.aarp.org/rgcenter/il/four_walls.pdf (accessed 20 Oct. 2018).
- Grum, B. (2017) Impact of facilities maintenance on user satisfaction. *Facilities*, 35(7-8), pp. 405–421. DOI: 10.1108/f-03-2016-0034
- Grum, B. & Kobal Grum, D. (2015) A model of real estate and psychological factors in decision-making to buy real estate. *Urbani izziv*, 26(1), pp. 82–91. DOI: 10.5379/urbani-izziv-en-2015-26-01-002
- Grum, B. & Temeljotov Salaj, A. (2011) Vloga lastnih in zunanjih dejavnikov pri konstrukciji vprašalnika za merjenje pričakovanih potencialnih pridobiteljev nepremičninskih pravic. *Anthropos*, 43 (1-2), pp. 257–275. DOI: 10.5379/urbani-izziv-2010-21-02-004
- Grum, B. & Temeljotov Salaj, A. (2013) The comparison of expressed satisfaction and expectations of potential real estate buyers in Slovenia and Japan. *Facilities*, 31(1-2), pp. 6–23. DOI: 10.1108/02632771311292482
- Harper, L. & Bayer, A. H. (2000) *Fixing to stay: A national survey of housing and home modification issues*. Washington, DC, AARP.
- Howe, D. (2011) *Attachment across the lifecourse*. London, Palgrave.
- Imamoglu, C. (2007) Assisted living as a new place schema. A comparison with homes and nursing homes. *Environment and Behavior*, 39, pp. 246–268. DOI: 10.1177/0013916506289977
- Kemp, C. L., Ball, M. M., Hollingsworth, C. & Perkins, M. M. (2012) Strangers and friends: residents' social careers in assisted living. *Psychological Sciences and Social Sciences*, 67, pp. 491–502. DOI: 10.1093/geronb/gbs043
- Kerbler, B. (2011) Prilaganje grajenega bivalnega okolja za potrebe starejših ljudi. *Geodetski vestnik*, 55(1), pp. 57–69. DOI: 10.15292/geodetski-vestnik.2011.01.057-069
- Khozaei, F., Ramayah, T., Hassan, A. S. & Surlenty, L. (2012) Sense of attachment to place and fulfilled preferences, the mediating role of housing satisfaction. *Property Management*, 30(3), pp. 292–310. DOI: 10.1108/02637471211233945
- Klinc, R., Turk, Ž. & Dolenc, M. (2010) Raziskava o rabi informacijsko-komunikacijskih tehnologij v Slovenski gradbeni industriji. *Gradbeni vestnik*, 59, pp. 269–276.
- Kobal Grum, D. & Grum, B. (2018) The association between pro-environmental behaviour nad subjective well-being. In: Grum, B. (eds.) *Book of proceedings, 3rd Conference of Interdisciplinary Research on Real Estate (CIRRE)*, pp. 43–53. Ljubljana, Institute of Real Estate Studies.
- Kulbickienė, L. (2004) Lietuvos gyventojų kultūriniai poreikiai: kultūros įstaigų vertinimas ir lankymas. *Sociologija. Mintis ir veiksmai*, 8(2), pp. 64–71.
- Lobe, B. (2006) *Mixing qualitative and quantitative methods in the environment of new information-communication technologies*. Ljubljana, Fakulteta za družbene vede.
- Mendes De Leon, C. F, Cagney, K. A., Bienias, J. L, Barnes, L.L., Skarupski, K.A., Scherr, P.A. & Evans, D.A. (2009) Neighborhood, social cohesion and disorder in relation to walking in community-dwelling older adults: A multilevel analysis. *Journal of Aging and Health*, 21(1), pp. 155–171. DOI: 10.1177/0898264308328650

- Meško, G. (2001) Kriminalna percepcija z načrtovanjem in oblikovanjem okolja. *Socialna pedagogika*, 5(4), pp. 445–468.
- Meško, G., Šifrer, J. & Vošnjak, L. (2012) Strah pred kriminaliteto v mes-
tih in vaških okoljih v Sloveniji. *Varstvoslovje*, 14(3), pp. 259–276.
- Milošević Arnold, V. (2003) Komunikacija med zaposlenimi in svojci
stanovalcev socialnih domov. In: Zbornik predavanj. 14. strokovno
srečanje Zveze društev medicinskih sester in zdravstvenih tehnikov
Slovenije, Terme Zreče, 21. in 22. oktober 2003, pp. 43–49. Zbor-
nica zdravstvene nege Slovenije – Zveza društev medicinskih sester in
zdravstvenih tehnikov Slovenije.
- Missimer, M., Robert, K.H. & Broman, G. (2017) A strategic approach to
social sustainability - Part 1: exploring social system. *Journal of Cleaner
Production*, 140, pp. 32–41. DOI: 10.1016/j.jclepro.2016.03.170
- Mohit, M. A., Ibrahim, M. & Rashid, Y. R. (2010) Assessment of residential
satisfaction in newly designed public low-cost housing in Kuala Lum-
pur, Malaysia. *Habitat International*, 34(1), pp. 18–27.
DOI: 10.1016/j.habitatint.2009.04.002
- Newman, O. (1972) *Defensible space*. New York, Macmillan.
- Pain, R. (2000) Place, social relations and the fear of crime:
A review. *Progress in Human Geography*, 24(3), pp. 365–387.
DOI: 10.1191/030913200701540474
- Parry, J., Vegeris, S., Hudson, M., Barnes, H. & Taylor, R. (2004) *Independ-
ent living in later life*. Research Report No 216. Available at: [http://cam-
paigns.dwp.gov.uk/asd/asd5/rports2003-2004/rrep216.pdf](http://campaigns.dwp.gov.uk/asd/asd5/rports2003-2004/rrep216.pdf) (accessed 5.
Sept. 2017).
- Popov, Y. (2017) Relations between wellbeing and transport infra-
structure of the country. *Procedia Engineering*, 178, pp. 579–588.
DOI: 10.1016/j.proeng.2017.01.112
- Ramovš, J. (2000) Medgeneracijska povezanost, samopomoč in kakov-
ostna starost. *Socialno delo*, 39(4–5), pp. 315–329.
- Ravbar, M. (2007) Prostorsko planiranje - čemu? *Geodetski vestnik*,
51(2), pp. 233–245.
- Roy, N., Bube, R., Despres, C., Freitas, A. & Legare, F. (2018) Choosing
between staying at home or moving: A systematic review of factors
influencing housing decisions among frail older adults. *PLoS One*, 13(1),
DOI: 10.1371/journal.pone.0189266
- Rojo, P., Fernandez-Mayoralas, G., Pozo Rivera, E. & Manuel Rojo,
A. (2001) Ageing in place: Predictors of the residential satisfac-
tion of elderly. *Social Indicators Research*, 54(2), pp. 173–208.
DOI: 10.1023/a:1010852607362
- Sabia, J. (2008) There's no place like home: A hazard model analysis
of aging in place among older homeowners in the PSID. *Research on
Aging*, 30(1), pp. 3–35. DOI: 10.1177/0164027507307919
- Sam, M., Fauzi, M. & Saadatian, O. (2012) Residential satisfaction and
construction. *Journal of Scientific Research and Essays*, 7(15), pp. 1556–
1563.
- Secker, J., Hill, R., Villeneuve, L. & Parkman, S. (2003) Promoting inde-
pendence: But promoting what and how? *Ageing and Society*, 23,
pp. 375–391. DOI: 10.1017/s0144686x03001193
- Sendi, R. (2005) Sodelovanje stanovalcev kot pogoj za uspešno iz-
vedbo prenove stanovanjskih sosesk. *Urbani izziv*, 16(2), pp. 5–15.
DOI: 10.5379/urbani-izziv-2005-16-02-001
- Sierra, L., Yepes, V. & Pellicer, E. (2017) Assessing the social sustain-
ability contribution of an infrastructure project under conditions of
uncertainty. *Environmental Impact Assessment Review*, 67, pp. 61–72.
DOI: 10.1016/j.eiar.2017.08.003
- Sierra, L., Yepes, V. & Pellicer, E. (2018) A review of multi-criteria assess-
ment of the social sustainability of infrastructures. *Journal of Cleaner
Production*, pp. 496–513. DOI: 10.1016/j.jclepro.2018.03.022
- Sirgy, M. J. & Cornwell, T. (2002) How neighborhood features affect
quality of life. *Social Indicators Research*, 59, pp. 79–114.
- Smrke, U., Blenkuš, M. & Sočan, G. (2018): Residential satisfaction ques-
tionnaires: A systematic review. *Urbani izziv*, 29(2), pp. 67–82.
DOI: 10.5379/urbani-izziv-en-2018-29-02-001
- Strath, S., Isaacs, R. & Greenwald, M. J. (2007) Operationalizing environ-
mental indicators for physical activity in older adults. *Journal of Aging
and Physical Activity*, 15(4), pp. 412–424. DOI: 10.1123/japa.15.4.412
- Temeljotov Salaj, A., in Petrič, G. (2009): Nepremičninski dejavniki
organizacijske klime. In: Brezovec, A. Mekinc, J. (eds.) *Management,
izobraževanje in turizem: kreativno v spremembe; Proceedings*, pp. 2870–
2879. Portorož, Turistica.
- Theodori, G. L. (2001) Examining the effects of community satisfac-
tion and attachment on individual well-being. *Rural Sociology*, 66(4),
pp. 618–628. DOI: 10.1111/j.1549-0831.2001.tb00087.x
- Trček, F. (2005) Socioloska anketna raziskava, Prenova stanovanjskih
sosesk v Ljubljani - Savsko naselje. *Urbani izziv*, 2005, 16(2), pp. 24–35.
DOI: 10.5379/urbani-izziv-2005-16-02-003
- Uršič, M. (2005) Spreminjanje bivalne kakovosti in stanovanjska mobil-
nost v Ljubljani, Naraščanje socialne nestabilnosti v večjih stanovan-
jskih soseskah? *Urbani izziv*, 16(2), pp. 36–47.
DOI: 10.5379/urbani-izziv-2005-16-02-004
- Vazonienė, G. (2015) The role of rural community enhancing rural
social infrastructure changes. *Research for rural development*, 2, pp. 176–
182.
- Vazonienė, G. & Pakeltienė, R. (2017) Methods for the assessment of
rural social infrastructure needs. *European Countryside*, 9(3), pp. 526–
540. DOI: 10.1515/euco-2017-0031
- Zapušek, A. & Kučan, A. (2009) Stanovanjske krajine in kakovost
bivanja. Predstavitev ukrepov za izboljšanje bivalne kakovosti, *An-
nales*, 19(1), pp. 1–18.
- Weber, B., Alfén, H. W. & Staub-Bisang, M. (2016) *Infrastructure as an
asset class—investment strategy, sustainability, project finance and PPP*. Ho-
boken, NJ, John Wiley & Sons. DOI: 10.1002/9781119226574
- Wiles, L., Allena, R. E. S., Palmera, A., Haymana, K., Keelingb, S. & Kersea,
N. (2009) Older people and their social spaces: A study of well-being
and attachment to place in Aotearoa New Zealand. *Social Science &
Medicine*, 68(4), pp. 664–671. DOI: 10.1016/j.socscimed.2008.11.030
- Wylde, M. A. (2008) The future of assisted living. Residents' perspec-
tives, 2006–2026. In: Golant S. M. Hyde J. (ed.) *The assisted living res-
idence. A vision for the future*, pp. 169–197. Baltimore, MD, The Johns
Hopkins University Press.

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A post-occupancy evaluation study of a mixed-income gated community in Cibubur, West Java, Indonesia

Gated communities (GCs) have been demonized as a malicious form of urban segregation because they provide a secure neighbourhood and exclusive facilities. The objective of the Indonesian government policy related to balanced housing is to create mixed-income housing in order to foster interaction between social classes in neighbourhoods and reduce the alarming social gap. This study seeks to validate the occurrence of social interaction among different economic strata in a mixed-income GC. To understand social interaction among its residents, the reasons why residents from different economic strata selected their housing are examined. The research methodology includes a post-occupancy evaluation in a mixed-income GC in Cibubur, West Java, Indonesia,

an area known for its high quality neighbourhoods and facilities. This study identifies security as a major housing preference factor for many people living in a mixed-income GC. However, the reduced exclusivity of such facilities decreases their usage frequency, giving rise to trans-cluster social interaction within the same class. This finding contradicts the objective of the balanced housing policy because the residents interact with others in a similar social class beyond the segregated walls of the housing clusters.

Keywords: housing preference, balanced housing, mixed-income, secure neighbourhood

1 Introduction

Gated communities (GCs) have existed in housing, urban design, and planning discourse since the twentieth century. Over the last three decades, GCs have emerged as the prevalent housing development worldwide (McKenzie, 2003), and they are now found in the Americas (Caldeira, 2000; Salcedo & Torres, 2004), Asia (King, 2004; Wu & Webber, 2004), Europe (Gooblar, 2002), Australia (Burke & Sebaly, 2001), and Africa (Kuppinger, 2008). They are the re-emergence of ancient cities from early human civilization (Low, 2001; Landman & Schonteich, 2002; Quintal, 2006), such as Jericho (Dupuis & Thorns, 2008), the Forbidden City in Beijing (Wu, 2005), traditional cities in the Arab world (Glasze & Alkhayyal, 2002), medieval cities in Europe, and colonial cities around the world (Blakely & Snyder, 1997). They symbolize massive security measures, feudal aristocrats in the Middle Ages, and economic power (Bekleyen & Dalkılıç, 2011).

The GC has been defined as self-segregating social groups that opt to live in homogenous enclaves with a certain type of lifestyle (Parker, 2006) and protect themselves from urban crime (Harvey, 1999) within surrounding walls and secure entrances (Low, 2003). Grant and Mittelsteadt (2004) also define the GC as a residential development with private roads closed to general traffic and with gates at primary entrances. The distinctive characteristics that separate GCs from ordinary neighbourhoods are security and barrier features, the functions of an enclosure, the facilities and amenities included, the type of residents, location, size, tenure, and policy context. Atkinson and Flint (2004) define the GC as people who take collective responsibility by behaving according to shared codes, which are characterized by legal agreements. Blakely and Snyder (1997) divide GCs into three types in terms of the degree of facilities, exclusivity, and security. The first type relates to the leisure lifestyle, reflected in various recreational amenities and other facilities that are available. It is driven by new lifestyle and consumption patterns due to globalization, which prioritizes self-interest (Caldeira, 1996). The second type corresponds to the prestigious community, which is reflected in the size of the house, and which includes certain services to maintain privacy. The third highlights layered security, which is manifested in the demand for security and safety. GCs promise a secure, privileged, and prestigious life (Erkip, 2003) in addition to eliminating the free use of amenities and decreasing property value (Le Goix, 2005) through the existence of security and surrounding walls (Low, 2003).

1.1 Aims of the study

The development of GCs in Indonesia began in the 1980s with the development of new towns in the areas surrounding Jakarta (Winarso, 2005). This is a result of peri-urbanization to meet the interests of wealthy individuals (Winarso et al., 2015) as well as reinforced spatial segregation (Firman, 2004). GCs polarize the social class in the exclusive residential area by minimizing interaction with the surrounding neighbourhood, especially with low-income residents (Firman, 2004).

In the 1980s, the national government began promoting foreign direct investment to boost economic growth (Leaf, 1994). Consequently, Jakarta experienced a property boom until the mid-1990s, and property prices tripled every year during that time span (Leaf, 1993). Housing development in the form of GCs rapidly expanded to surrounding cities and regencies such as Depok City, the Bogor Regency, Bogor City, Tangerang City, South Tangerang City, the Tangerang Regency, Bekasi City, and the Bekasi Regency. According to Pribadi and Pauleit (2016), the size of overall housing development reached approximately 200,000 hectares (20 km²) by the 1980s, and Kartiwa (2016) reports that GCs in the Greater Jakarta Metropolitan Area cover approximately 4.4 km². Therefore, GCs have accounted for around 25% of the total housing development in the Greater Jakarta Metropolitan Area since the 1980s.

A study by Leisch (2002) concludes that GCs in the Greater Jakarta Metropolitan Area are the result of an increasing number of insecure affluent citizens, who demand security to protect their prestigious lifestyles, in addition to religious and ethnic differences. In contrast, a study by Ginting and Sakinah (2018) in Surabaya (Indonesia) proved the absence of socioeconomic or racial segregation in GCs because the gates and surrounding walls simply provide security. Other studies of GCs in Indonesia highlight the emerging phenomenon of GCs in an urban context (Dick & Rimmer, 1998; Leisch, 2002), the typology of GCs, the utilization of surveillance technology for warranted security (Hishiyama, 2010), location (Ahmadi, 2005; Febby, 2010), the property market (Aris, 2003; Rudiawan, 2008), and people's preference for living in a GC (Nurhadi, 2004; Tambunan, 2009; Handoko, 2011; Sueca & Fitriani, 2012). However, the relationships between housing preferences and the level of satisfaction of GC residents remain understudied.

Several housing clusters in GC complexes have various types of houses for creating a mixed-income neighbourhood, with a required ratio of 1 2 3 for low-income, middle-income, and high-income since the enactment of Housing and Settlement Act 1/2011, Government Regulation 14/2016, and Ministry of Public Housing Decree 10/2012 on balanced housing. This

policy regulates the number of high-, middle-, and low-income housing units in each housing complex. It is intended to create social harmony among the different economic strata of the community and transfer the obligation of the government to the private sector in low-income housing provision programs due to limited resources. Following the enactment of these regulations, the private sector in Indonesia has been obligated to build mixed-income GCs. However, the enactments have failed to achieve the expected results due to ever-increasing property prices, which burden the private sector to provide low-income housing inside mixed-income GCs. As a result, since 2015, the government has permitted the private sector to build GCs with low-income housing separately on the outskirts of the city by enacting Ministry of Public Housing Decree 7/2013, where land prices are still reasonable enough to provide affordable housing for low-income citizens. According to the new regulation, unbalanced housing in GC developments has been mushrooming in the Greater Jakarta Metropolitan Area.

According to many scholars, this regulation diminishes the expected social interaction between different economic strata in society. Despite all doubts, does social interaction among different economic strata occur in mixed-income GCs? If not, why? How do the different economic strata arise in a mixed-income GC? This study seeks to validate the occurrence of social interaction among different economic strata in a mixed-income GC and to understand why social interaction occurs in a mixed-income GC. The results of the study will contribute to improving housing policy in Indonesia with regard to the correlation between mixed-income GC and social interactions between different economic strata.

2 Literature review

2.1 The negative implications and positive contributions of GCs

The rise of GCs in the US was caused by escalating racial conflict, urban violence, and social inequalities, and was related to accommodating the exodus of the white middle class in the 1980s (Sandercock, 2003). However, some scholars state that the rise of the neoliberal economy in the same period (Leisch, 2002; Hackworth, 2007; Remali & Salama, 2016) contributed to the mushrooming of GCs all over the globe, including in Argentina (Thuillier, 2005), Chile (Salcedo & Torres, 2004), Brazil (Coy & Pohler, 2002), Saudi Arabia (Glasze & Alkhalayal, 2002; Glasze et al., 2006), Ghana (Asiedu & Arku, 2009), South Africa (Breetzke & Cohn, 2013), Bulgaria (Stoyanov & Frantz, 2006), Canada (Townshend, 2006), England (Blandy, 2006), Indonesia

(Leisch, 2002), Vietnam (Pow, 2009), Qatar (Rizzo, 2014; Zaina et al., 2016), Lebanon (Glasze & Alkhalayal, 2002), Portugal (Raposo, 2006), New Zealand (Dupuis & Thorns, 2008), Australia (Gleeson, 2006), and even in communist countries such as China (Lee & Webster, 2006; Pow, 2007a, 2007b) and in post-communist countries such as Estonia (Ruoppila & Kaehrik, 2003), Russia (Blinnikov et al., 2006), Bulgaria (Stoyanov & Frantz, 2006; Hirt, 2012), Romania (Negura, 2009), Serbia (Hirt & Petrović, 2011), Poland (Mostowska, 2009), (East) Germany, and Hungary (Bodnar & Molnar, 2010).

The existence of GCs as a form of exclusive and segregated neighbourhood has been criticized by various scholars (Low, 2003; Manzi & Smith-Bowers, 2005; Roitman, 2005). The surrounding walls eliminate the connection to and need for interaction with non-residents (Burke & Sebal, 2001), which contradicts government policies to increase social cohesion through continuous linking between neighbourhoods (Grant et al., 2004). GCs also increase the social gap and anxiety among citizens (Low, 2003; Sandercock, 2003) because they symbolize the social inequalities between the upper and lower social classes (Sanchez et al., 2005; Webster et al., 2006). Studies in Malaysia (Xavier, 2008; Lean & Smyth, 2012) demonstrate that soaring property values contribute significantly to the problem of affordable housing provision as a derivative urban problem of GCs. However, the surrounding walls, security gates, and CCTVs cannot insulate GCs from crime, as is often promised. According to studies in South Africa (Wilson-Donges, 2000; Duca, 2015), Turkey (Erkip, 2003), and England (Atkinson & Blandy, 2005), GCs become targets of crime, and the social cohesiveness required for crime prevention is absent. Due to their negative implications, GCs have been demonized with various nicknames, such as fortified enclaves (Caldeira, 2000), exclusive gated worlds of immune communities (Harvey, 1999), quiet and safe havens (Bauman, 2001), dystopias of exclusion (Young, 1999), architectures of fear (Ellin, 1997), and even apartheid architecture (Davis, 1998) to portray the malicious effects of this type of neighbourhood.

Nonetheless, GCs also have positive contributions. They offer an opportunity for better quality of urban design, facilities, and open spaces (Grant et al., 2004). Houses and amenities are designed and developed with a certain set of rules for ensuring the comfort of living in a well-ordered neighbourhood. Public amenities are managed by a private self-governing organization (Glasze et al., 2006). GCs produce shared rules – or private governance, to use Blandy and Lister's (2005) term – which are regarded as more efficient and effective neighbourhood management when compared to public management by government. Grant (2005) argues that this private governance minimizes the burden on public management by the government to supply and maintain public amenities.

Although social ties and cohesion are not the main preference factors of the GC's residents (Blandy & Lister, 2005), they are developed significantly after living in the neighbourhood (Garip & Şener, 2012) due to the fact that the residents are living in a confined neighbourhood (Edgü & Cimşit, 2011) and share the common interest of a relatively homogeneous social class (Xavier, 2008) to support a sense of security (Grant, 2005). Furthermore, a GC is a sanctuary for those who do not follow the established rules or norms in society. For instance, in Saudi Arabia, GCs provide freedom for those who do not agree with the conservative culture on the outside, such as women and expatriates (Odrowaz-Coates, 2015).

Regardless of the negative implications and positive contributions that GCs share, they are the result of the failure of urban and housing policies to provide a secure and safe living environment (Coy & Poehler, 2002; Glasze & Alkhayyal, 2002; Le Goix, 2005; Rosen & Razin, 2008). Unfortunately, the GC is considered an efficient form of housing development because of developers' involvement in public service provision (Foldvary, 1994). Despite all the problems GCs have caused, many governments such as those in the US (Blakely & Snyder, 1997; Low, 2003; McKenzie, 2006), Canada (Grant, 2005), and Argentina (Roitman, 2005; Libertun de Duren, 2006) are averse to forestalling the expansion of GCs because they contribute to tax revenues and the provision of public amenities (Grant, 2005; Glasze et al., 2006).

3 Research method

In line with its aims, this study uses a qualitative approach and a case study research method. The selected research area is in the Cibubur district, West Java province, Indonesia, because of the good quality of its neighbourhoods and facilities. This GC complex is large, with an area of approximately 480 hectares, with 270 hectares set aside for future development. Since 1997, this GC complex has developed forty-eight housing clusters for approximately 8,700 residents and various facilities such as a market, schools, recreation areas, sports areas, and restaurant, worship, and transportation facilities.

The legislation in force establishes categories of designated residents in mixed-income GCs based on their monthly incomes: below USD 300 for low-income residents, USD 300 – 600 and 600 – 1,000 for middle-income residents, and above USD 1,000 for affluent residents. The private developer built different types of houses, as defined in the regulations governing mixed-income GCs. Low-income residents are intended to purchase the 21 m² house type, the first middle income group (USD 300 – 600) the 36 m² house type, the second

middle income group (USD 600 – 1,000) the 45 – 60 m² house type, and the affluent group the largest house type, which averages 120 – 250 m².

According to the estate management, before the enactment of Ministry of Public Housing Decree 10/2012, this GC complex built fifteen housing clusters only for middle- and high-income residents. When the regulation was enacted in 2012, only two housing clusters were built in compliance with the decree. Two years later, after enactment of the revised regulation, the rest of the thirty-one housing clusters in the GC complex without low-income housing were mushrooming. This study selected respondents living in the two mixed-income housing clusters, which were built according to Ministry of Public Housing Decree 10/2012, to validate the occurrence of social interaction between social classes in a mixed-income GC.

In order to understand social interaction among residents with different economic statuses, this study examines the reasons for housing selection by residents in different economic strata. It investigates the housing preference factors and the priority of security facilities as the main reasons residents decide to live in a mixed-income GC. Furthermore, this study investigates the usage frequency of the facilities in the GC complex and the frequency of social interaction among residents in the GC in order to understand how often and where social interaction occurred between residents from different economic strata.

Maintaining personal privacy and a lack of interest were the main obstacles to obtaining primary data from GC residents with a door-to-door survey, despite the fact that the estate management and head of the neighbourhood issued survey permits for each housing cluster. Although a survey permit was issued, the estate management demanded anonymity for any publication resulting from this study. Among the 480 residents living in the two mixed-income housing clusters in the GC complex, only eighty-nine respondents participated in this study through snowball sampling.

All four aspects of the study were investigated using a five-point Likert scale. This is a prominent analysis instrument in post-occupancy evaluation in many studies worldwide (Hasanain, 2008; Najib et al., 2011; Owolabi, 2015; Eshaghi & Khozaei, 2016). This study employs this instrument to analyse housing preference factors and the priority of types of security in the GC complex (1 = very important to 5 = least important), as well as the usage frequency of the facilities provided and the frequency of social interaction (1 = most frequent to 5 = least frequent). It was accompanied by semi-structured interviews to investigate the cause of the relationships between the first three aspects and the reasons for social interaction among residents in mixed-income housing clusters.

Table 1: Housing preference factors by age, sex, and monthly income.

Preference factor	General	Age (yrs.)		Sex		Monthly income (USD)*			
		< 45	> 45	M	F	< 300	300–600	600–1,000	> 1,000
Security	1.61	1.88	1.36	1.56	1.65	2.29	2.57	2.90	4.07
Facility quality/quantity	1.75	1.95	1.53	1.63	1.85	1.57	2.36	1.80	2.53
Safety	2.06	2.21	1.89	2.00	2.10	2.29	3.00	2.10	2.81
Investment	2.39	2.37	2.42	2.44	2.35	2.00	2.36	2.10	2.79
Strategic location	2.39	2.37	2.38	2.37	2.41	2.29	3.21	2.20	3.24
House design	2.49	2.63	2.38	2.34	2.63	3.43	1.71	1.10	1.72
Social cohesiveness	2.61	2.86	2.33	2.76	2.48	2.29	2.57	1.60	1.93

Note: *USD 1 = IRP 15,000

Table 2: Priority of types of security by age, sex, and monthly income.

Priority of types of security	General	Age		Sex		Monthly income (USD)*			
		< 45	45–65	M	F	< 300	300–600	600–1,000	> 1,000
Security at cluster gate	1.67	1.74	1.62	1.63	1.71	2.00	2.00	1.40	2.16
Regular security patrol	1.75	1.91	1.62	1.63	1.85	1.57	2.36	1.60	1.66
Security at main gate	1.91	2.00	1.84	1.76	2.04	2.29	3.64	2.20	3.02
CCTV in neighbourhood	2.01	2.02	2.02	1.76	2.23	2.14	2.86	2.70	3.91
Segregating wall	2.08	2.00	2.18	1.95	2.19	2.14	1.71	1.50	2.76
Neighbourhood regulations	2.19	2.33	2.09	2.00	2.35	2.00	2.14	1.50	2.62
Security in facilities	2.55	2.72	2.40	2.60	2.50	2.57	1.71	1.30	2.02

Note: *USD 1 = IDR 15,000

4 Findings and discussion

4.1 Priority of housing preference factors

Among the eighty-nine respondents, as shown in Table 1, security (1.61) was the main reason for purchasing and living in the GC, followed by the quality and quantity of facilities (1.75), features in the neighbourhood (2.06), investment considerations (2.39), strategic location (2.39), house design (2.49), and social cohesiveness (2.61). Fear of crime in the neighbourhood was a consideration for the respondents, considering increasing residential criminal activity in Jakarta, such as property theft and child abduction. The availability of facilities was also a preference factor due to the lack of good quality public facilities in the city and the low number of public facilities as well. Furthermore, poor construction of infrastructure and careless drivers in the city create unsafe neighbourhoods, especially for the elderly and children, which makes mixed-income housing clusters in a GC the preferable housing option. Because of the security, facilities, and strategic location, houses in a GC have emerged as a promising investment commodity, regardless of the house design offered. Although it is still regarded as an important preference factor, social cohesiveness is the lowest priority of residents living in the GC.

The residents' highest housing preference factors are security and available facilities (Blakely & Snyder, 1997). The results for the respondent group under 45 agree with the general results of the survey, whereas the older group shows certain differences. For the older group, social cohesiveness is not the lowest preference factor, but is higher than house design, strategic location, and investment consideration. This finding demonstrates that social cohesiveness within the neighbourhood is still a necessity that must be met in GCs, as argued by some researchers (Edgü & Cimşit, 2011; Garip & Şener, 2012).

4.2 Priority of security facilities

Table 2 shows that security at the housing cluster gate (1.67) is the main preferred type of security, followed by a regular security patrol (1.75), security at the main gate (1.91), CCTV in the neighbourhood (2.01), a segregating wall with the surrounding neighbourhood (2.08), neighbourhood regulations (2.19), and security in the facilities for the complex residents (2.55).

Although the priorities between the age and sex groups are similar, there are notable differences between the monthly income groups. For respondents with a monthly income less

Table 3: Usage frequency of facilities provided in the GC complex.

		Facilities in GC complex								
		China Village	Sport	Food court	Market	Park	Worship	School	Bank	Bus
Use for needs	Frequency	4.48	3.40	2.39	1.57	3.65	1.89	2.58	2.25	3.58
	Correlation	.03	(.04)	.26	.19	.11	.13	(.09)	.11	.16
Interact with others	Frequency	4.84	3.79	2.84	2.01	3.69	2.02	2.96	2.84	3.89
	Correlation	(.02)	(.05)	.20	.16	.09	.17	.01	.19	.15

than USD 300, a regular security patrol is the highest priority rather than security at the cluster gate because it impedes their family members living outside the GC from visiting. Neighbourhood regulations to increase awareness of security and safety within the cluster has higher priority than security at the main gate and CCTV in the neighbourhood. The first shares the same reason with the security at the cluster, and the second will increase the monthly maintenance fee. In contrast, for the higher income groups (USD 300 – 600 and USD 600 – 1,000), exclusive facilities for complex residents are the highest priority. The security and safety aspects are compromised because they are shared with the non-complex residents, whom they barely recognize.

This finding confirms that the priority for types of security is determined by the capacity for crime prevention. Additional technology such as CCTV is the least preferred type of security for most respondents because it increases the monthly expenditure but offers less direct crime prevention. Security at the housing cluster gate and a regular security patrol are the most favourable types of security because of their success with direct crime prevention.

4.3 Usage frequency of facilities provided in the GC complex

Table 3 shows that the market (1.57), worship place (1.88), bank (2.25), food court (2.39), and school (2.58) are the most frequently used facilities in this case. In contrast, sport (3.40), bus (3.58), park (3.65), and the China Village recreational area (4.48) are the least frequently used by respondents. Although the availability of facilities is one of the highest preference factors for residents for living in a GC, the correlation with usage frequency is insignificant. This signifies that the facilities provided are the main attractive quality of the mixed-income housing cluster, but the residents do not frequently use the facilities to meet their needs.

According to the interviews, the types of sports facilities provided do not suit the needs of the residents. Most respondents are reluctant to use these facilities because of a mismatch be-

tween the types and cost of the sports facilities. Sports facilities, such as the gym and golf course, are not the preferred types for most of them. The respondents prefer communal sports facilities with an affordable cost, such as a swimming pool and sports field. Large numbers of non-resident users, especially on the weekend, also increase the disinclination to use the facilities. A long queue for using equipment in the gym, and noise and crowding inside the facility, create an unpleasant ambiance for residents. It is similar for the shuttle bus, which is mostly used by non-residents to travel to and from their relatives' homes in the GC or to use the facilities. Furthermore, most residents prefer to use their own vehicles rather than the bus.

Although the GC's parks are spacious and have an artistic layout, and the residents appreciate them visually, they are reluctant to use them for weekend picnics or to use any other outdoor facilities. They prefer indoor activities due to the unpleasant humid tropical weather. Although the China Village offers a comfortable space for a tour, it attracts more non-residents than residents. For residents, it is the least necessary facility and they only utilize it to amuse their relatives who stop by, especially children. This finding identifies a discrepancy between the priority of housing preference factors with the usage frequency of the facilities provided. They are the primary housing preference factors of the respondents and why they choose to live in the GC (after security, of course), yet they rarely use the facilities. This occurs because of the mismatch of needs and the lack of exclusivity. The open access allowing non-residents to utilize the facilities has eradicated the sense of a secure, privileged, and prestigious lifestyle, as argued by Blakely and Snyder (1997) and Erkip (2003).

4.4 Frequency of social interaction among residents in the GC

Generally, as shown in Table 4, respondents interact or socialize with non-cluster residents (1.97), followed by cluster residents (2.72), non-complex residents (3.61), and complex residents (3.74). This indicates that interaction occurs in the facilities, such as at the market or sports facility, where they meet

Table 4: Frequency of social interaction among residents in the GC complex.

Frequency of social interaction in GC complex	General	Age		Sex		Monthly income (USD)*			
		< 45	45–65	M	F	< 300	300–600	600–1,000	> 1,000
With non-cluster residents	1.97	2.05	1.84	2.02	1.92	1.57	1.57	1.00	1.64
With cluster residents	2.72	2.81	2.60	2.83	2.63	2.29	3.29	2.00	2.71
With non-complex residents	3.61	3.67	3.56	3.66	3.56	3.86	2.50	1.60	2.72

Note: *USD 1 = IRP 15,000

with various complex residents. The interaction in the cluster neighbourhood occurs when there is a special event, such as an independence day ceremony, voting in the general election, or a wedding or funeral ceremony for a neighbour. Interaction with non-complex residents, who also use facilities such as the market or the sports facilities, has the lowest frequency.

There is a similar ranking in most of the respondent groups by age, by sex, and mostly by monthly income, except for the USD 300 – 600 and USD 600 – 1,000 groups. These groups have a higher frequency of interaction with non-complex residents than their cluster residents. This occurs in the facilities shared with non-complex resident users and minimizes the possibility of crime occurring within the complex. According to the respondents, this interaction will create social ties between residents and non-residents, which significantly prevents the occurrence of crime and reduces the crime rate within the complex.

This finding contrasts with previous studies, which argue that segregation is the ultimate desire of all the residents living in a GC (Burke & Sebaly, 2001; Low, 2003; Manzi & Smith-Bowers, 2005; Roitman, 2005). The enactment of Ministry of Public Housing Decree 10/2012 has successfully minimized the negative effect of segregation in this mixed-income GC complex, but not in the confined housing clusters. This GC is partially porous and penetrable by non-residents.

In the confined housing cluster, the residents rarely interact with each other, unless they are from the same family or the same social group. Different economic strata share major obstacles to social interaction, such as disconnected topics of conversation and feelings of inferiority among others. The residents tend to socially interact with the same economic strata in surrounding clusters, rather than different social classes within their own cluster. To some extent, this confirms the claims of several scholars (Edgü & Cimşit, 2011; Garip & Şener, 2012), who optimistically argue that social interaction and cohesiveness grow in mixed-income GCs. However, it introduces a new pattern of trans-cluster homogeneous social class interaction. The mixed-income housing cluster cannot develop shared common interests compared to the relative-

ly homogeneous social class, as Xavier (2008) asserts. This indicates that the enactment of Ministry of Public Housing Decree 10/2012 is not working effectively to foster social interaction in mixed-income GCs.

5 Conclusion

In order to significantly minimize social segregation, the government encouraged mixed-income housing by enacting Ministry of Public Housing Decree 10/2012 on balanced housing. It is designated to foster social interaction among residents from different economic strata with different monthly incomes. However, it reduces the exclusivity of GCs in terms of the usage of facilities and social class homogeneity. This study shows the ineffectiveness of mixed-income GCs in fostering social interaction among residents from different economic strata.

Security is the main preference factor for the residents of GCs. The poor security and facilities provided by the government are the root of their willingness to live in a GC. They also hope to avoid accidents or crime because the government is unable to provide safety and security for their families. However, the findings of this study also identified a discrepancy between the priority of housing preference factors with usage frequency of the facilities provided. Facilities are the primary housing preference factor among the respondents and the reason they choose to live in a GC, yet they rarely use them. This occurs because of a mismatch of needs and a lack of exclusivity. Therefore, the facilities in the GC fail as a medium to foster social interaction among residents from different economic strata.

Social interaction among residents in the housing cluster also rarely occurs. The different economic strata create different common interests and discourage interaction. Nonetheless, trans-cluster interaction among the same social class is evident in the emergence of social interaction with the same social class beyond the segregated walls. This also provides substantial evidence of the ineffectiveness of mixed-income GCs in fostering social interaction among residents from different economic strata. Therefore, more advanced studies are required to

foster social cohesiveness among different economic strata in mixed-income GCs. The spatial pattern of social interaction, and high-quality housing and neighbourhood design merit further investigation to minimize the negative implications of GCs in the future. This study also contributes to the improvement of housing policy for creating better mixed-income housing and neighbourhoods in the future.

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References

Ahmadi, A. (2005) *Faktor-faktor yang mempengaruhi perkembangan fisik area pinggir kota berdasarkan aspek persepsi bermukim pada kota Sengkang Provinsi Sulawesi Selatan*. Master's thesis. Semarang, Diponegoro University.

Aris, R. (2003) *Perilaku pengembang kecil dalam keputusan investasi di Bandung Raya*. Master's thesis. Bandung, Bandung Institute of Technology.

Asiedu, A. B. & Arku, G. (2009) The rise of gated housing estates in Ghana: Empirical insights from three communities in Metropolitan Accra. *Journal of Housing and the Built Environment*, 24(3), pp. 227–247. DOI: 10.1007/s10901-009-9146-0

Atkinson, R. & Blandly, S. (2005) Introduction: International perspective on the new enclavism and the rise of gated communities. *Housing Studies*, 20(2), pp. 177–186. DOI: 10.1080/0267303042000331718

Atkinson, R. & Flint, J. (2004) Fortress UK? Gated communities, the spatial revolts of the elites and time-space trajectories of segregation. *Housing Studies*, 19(6), pp. 875–892. DOI: 10.1080/0267303042000293982

Bauman, Z. (2001) *Community. Seeking safety in an insecure world*. Oxford, Polity.

Bekleyen, A. & Dalkılıç, N. (2011) The influence of climate and privacy on indigenous courtyard houses in Diyarbakır, Turkey. *Scientific Research and Essays*, 6(4), pp. 908–922. DOI: 10.5897/SRE10.958

Blakely, E. J. & Snyder, G. M. (1997) *Fortress America: Gated communities in the United States*. Washington, DC, Brookings Institution Press. DOI: 10.1177/000169939804100209

Blandly, S. (2006) Gated communities in England: Historical perspectives and current developments. *GeoJournal*, 66(1–2), pp. 15–26. DOI: 10.1007/s10708-006-9013-4

Blandly, S. & Lister, D. (2005) Gated communities: (Ne)gating community development? *Housing Studies*, 20(2), pp. 287–301. DOI: 10.1080/026730303042000331781

Blinnikov, M., Shanin, A., Sobolev, N. & Volkova, L. (2006) Gated communities of the Moscow green belt: Newly segregated landscapes and the suburban Russian environment. *GeoJournal*, 66, pp. 65–81. DOI: 10.1007/s10708-006-9017-0

Bodnar, J. & Molnar, V. (2010) Reconfiguring private and public: State, capital and new housing developments in Berlin and Budapest. *Urban Studies*, 47(4), pp. 789–812. DOI: 10.1177/0042098009351188

Breetzke, G. D. & Cohn, E. G. (2013) Burglary in gated communities: An empirical analysis using routine activities theory. *International Criminal Justice Review*, 23(1), pp. 56–74. DOI: 10.1177/1057567713476887

Burke, M. & Sebaly, C. (2001) Locking in the pedestrian? The privatised streets of gated communities. *World Transport Policy and Practice*, 7(4), pp. 67–74.

Caldeira, T. P. R. (1996) Building up walls: The new pattern of spatial segregation in Sao Paulo. *International Social Science Journal*, 48(1), pp. 55–66. DOI: 10.1111/j.1468-2451.1996.tb00056.x

Caldeira, T. P. R. (2000) *City of walls: Crime, segregation, and citizenship in Sao Paulo*. Berkeley, University of California Press.

Coy, M. & Pohler, M. (2002) Gated communities in Latin American megacities: Case studies in Brazil and Argentina. *Environment and Planning B: Planning and Design*, 29(3), pp. 355–370. DOI: 10.1068/b2772x

Davis, M. (1998) *Ecology of fear: Los Angeles and the imagination of disaster*. New York, H. Holt.

Dick, H. W. & Rimmer, P. J. (1998) Beyond the third world city: The new urban geography of South East Asia. *Urban Studies*, 35(12), pp. 2303–2321. DOI: 10.1080/0042098983890

Duca, F. (2015) Gating in Johannesburg: Digging inside the social and political system of a golf estate and suburban suburb. In: Bagaeeen, S. & Uduku, O. (eds.) *Beyond gated communities: Urban gating and soft boundaries*, pp. 49–64. Oxon, UK, Routledge. DOI: 10.4324/9781315765976-4

Dupuis, A. & Thorns, D. (2008) Gated communities as exemplars of “forting up” practices in a risk society. *Urban Policy and Research*, 26(2), pp. 145–157. DOI: 10.1080/08111140802026800

Edgü, E. & Cimsit, F. (2011) Island living as a gated community: Place attachment in an isolated environment. *AJZ ITU Journal of the Faculty of Architecture*, 8(2), pp. 156–177.

Ellin, N. (1997) *Architecture of fear*. New York, Princeton Architectural Press.

Erkip, F. (2003) The shopping mall as an emergent public space in Turkey. *Environment and Planning A: Economy and Space*, 35(6), pp. 1073–1093. DOI: 10.1068/a35167

- Eshaghi, A., Khozaei, F. (2015) Learning from architects' mistakes, a case study of three female students residence halls. *Specialty Journal of Architecture and Construction*, 1(3), pp. 17–21.
- Febby, A. (2010) Preferensi penghuni perumahan di kota Pekanbaru dalam menentukan lokasi perumahan. *Jurnal Ekonomi Pembangunan*, 12(1), pp. 77–91. DOI: 10.23917/jep.v12i1.207
- Firman, T. (2004) New town development in Jakarta metropolitan region: A perspective of spatial segregation. *Habitat International*, 28(3), pp. 349–368. DOI: 10.1016/S0197-3975(03)00037-7
- Foldvary, F. (1994) *Public goods and private communities: The market provision of social services*. Aldershot, UK, Edward Elgar.
- Garip, S. B. & Sener, H. (2012) Analysing environmental satisfaction in gated housing settlements: A case study in İstanbul. *AJZ ITU Journal of the Faculty of Architecture*, 9(1), pp. 120–131.
- Ginting, S. W. & Sakinah, R. (2018) Gated community in Indonesian peri-urban: Security or segregation? *IOP Conf. Series: Earth and Environmental Science*, 202(1), pp. 1–10. DOI: 10.1088/1755-1315/202/1/012057
- Glasze, G. & Alkhalayal, A. (2002) Gated housing estates in the Arab world: Case studies in Lebanon and Riyadh, Saudi Arabia. *Environment and Planning B: Planning and Design*, 29(3), pp. 321–336. DOI: 10.1068/b12825t
- Glasze, G., Webster, C. & Frantz, K. (2006) *Private cities: Global and local perspectives*. London, Routledge.
- Gleeson, B. (2006) *Australia's heartlands: Making space for hope in the suburbs*. Crows Nest, NSW, Allen & Unwin.
- Gooblar, A. (2002) Outside the walls: Urban gated communities and their regulation within the British planning system. *European Planning Studies*, 10(3), pp. 321–334. DOI: 10.1080/09654310220121068
- Grant, J. (2005) Planning responses to gated communities in Canada. *Housing Studies*, 20(2), pp. 273–285. DOI: 10.1080/0267303042000331772
- Grant, J., Greene, K. & Maxwell, K. (2004) The planning and policy implications of gated communities. *Canadian Journal of Urban Research*, 13(1), pp. 70–88. Available at: <http://www.jstor.org/stable/44321057> (accessed 20 Feb. 2019)
- Grant, J. & Mittelsteadt, L. (2004) Types of gated communities. *Environment and Planning B: Planning and Design*, 31(6), pp. 913–930. DOI: 10.1068/b3165
- Hackworth, J. (2007) *The neoliberal city: Governance, ideology, and development in American urbanism*. Ithaca, NY, Cornell University Press. DOI: 10.7591/9780801461590
- Handoko, J. P. S. (2011) *Pertumbuhan permukiman gated community di Yogyakarta: Perumahan-perumahan di Kabupaten Sleman Yogyakarta*. Yogyakarta, Proceeding Seminar Nasional SCAN#2 Lifestyle and Architecture. DOI: 10.13057/psnmbi/m010419
- Harvey, D. (1999) *Justice, nature & the geography of difference*. Oxford, Blackwell.
- Hassanain, M. A. (2008) On the performance of evaluation on sustainable student housing facilities, *Journal of Facilities Management*, 6(3), pp. 212–225. DOI: 10.1108/14725960810885989
- Hirt, S. A. (2012) *Iron curtains. Gates, suburbs and privatization of space in the post-socialist city*. Chichester, UK, Wiley-Blackwell. DOI: 10.1002/9781118295922
- Hirt, S. A. & Petrović, M. (2011) The Belgrade wall: The proliferation of gated housing in the Serbian capital after socialism. *International Journal of Urban and Regional Research*, 35(4), pp. 753–777. DOI: 10.1111/j.1468-2427.2011.01056.x
- Hishiyama, K. (2010) Uneasy society in Indonesia: With special attention to the gated community and CCTV in Bali, *Procedia Social and Behavioral Sciences*, 2(1), pp. 14–23. DOI: 10.1016/j.sbspro.2010.01.006
- Kartiwa, A. (2016) *Jaringan pengembang perumahan skala besar di Jabodetabek*. Master's thesis. Bandung, Bandung Institute of Technology.
- King, A. D. (2004) *Spaces of global cultures: Architecture urbanism identity*. New York, Routledge.
- Kuppinger, P. (2008) Exclusive greenery: New gated communities in Cairo. *City & Society*, 16(2), pp. 35–61. DOI: 10.1525/city.2004.16.2.35
- Landman, K. & Schonteich, M. (2002) Urban fortresses. Gated communities as a reaction to crime. *African Security Review*, 11(4), pp. 71–85. DOI: 10.1080/10246029.2002.9628147
- Le Goix, R. (2005) Gated communities: Sprawl and social segregation in southern California. *Housing Studies*, 20(2), pp. 323–344. DOI: 10.1080/0267303042000331808
- Leaf, M. (1993) Land rights for residential development in Jakarta, Indonesia: The colonial roots of contemporary urban dualism. *International Journal of Urban and Regional Research*, 17(4), pp. 477–491. DOI: 10.1111/j.1468-2427.1993.tb00236.x
- Leaf, M. (1994) The suburbanization of Jakarta: A concurrence of economics and ideology. *Third World Planning Review*, 16(4), pp. 341–356. DOI: 10.3828/twpr.16.4.n51557k1532xp842
- Lean, H. H. & Smyth, R. (2013) Regional house prices and the ripple effect in Malaysia. *Urban Studies*, 50(5), pp. 895–922. DOI: 10.1177/0042098012459582
- Lee, S. & Webster, C. (2006) Enclosure of the urban commons. *GeoJournal*, 66(1/2), pp. 27–42. DOI: 10.1007/s10708-006-9014-3
- Leisch, H. (2002) Gated communities in Indonesia. *Cities*, 19(5), pp. 341–350. DOI: 10.1016/S0264-2751(02)00042-2
- Libertun de Duren, N. R. (2006) Planning a la carte: The location patterns of gated communities around Buenos Aires in a decentralized planning context. *International Journal of Urban and Regional Research*, 30(2), pp. 308–327. DOI: 10.1111/j.1468-2427.2006.00667.x
- Low, S. (2003) *Behind the gates: Life, security and the pursuit of happiness in fortress America*. New York, Routledge. DOI: 10.4067/s0250-71612003008700008
- Low, S. M. (2001) The edge and the center: Gated communities and the discourse of urban fear. *American Anthropologist*, 103(1), pp. 45–58. DOI: 10.1525/aa.2001.103.1.45
- Manzi, T. & Smith-Bowers, B. (2005) Gated communities as club goods: Segregation or social cohesion? *Housing Studies*, 20(2), pp. 345–359. DOI: 10.1080/0267303042000331817
- McKenzie, E. (2003) Common-interest housing in the communities of tomorrow. *Housing Policy Debate*, 14(1&2), pp. 203–234. DOI: 10.1080/10511482.2003.9521473
- McKenzie, E. (2006) *The dynamics of privatopia: Private residential governance in the USA*. In: Glasze, G., Webster, C. & Frantz, K. (eds.) *Private cities: Global and local perspectives*, pp. 9–30. London, Routledge.
- Mostowska, M. (2009) Provision of private services and enforcing neighbours' behaviour in one of Warsaw's gated neighborhoods. In: Smigiel, C. (ed.) *Gated and guarded housing in Eastern Europe*, pp. 69–74. Leipzig, Leibniz-Institut für Länderkunde.
- Najib, N. U. M., Yusof, N. A., & Abidin, N. Z. (2011) Student residential satisfaction in research universities. *Journal of Facilities Management* 9(3), pp. 200–212. DOI: 10.1108/14725961111148108

- Negara, O. (2009) Residential ensembles in "hypermodern times". A case study of their aspirations in Bucharest. In: Smigiel, C. (ed.) *Gated and guarded housing in Eastern Europe*, pp. 59–68. Leipzig, Leibniz-Institut für Länderkunde.
- Nurhadi, I. (2004) *Preferensi masyarakat dalam memilih perumahan perkotaan di kota Tangerang studi kasus: Perumahan Banjar Wijaya, Poris Indah, dan Perumnas IV*. Master's thesis. Semarang, Universitas Diponegoro. DOI: 10.31848/arcade.v1i2.16
- Odwowaz-Coates, A. (2015) A gated community as a "soft" and gendered total institution. *International Sociology*, 30(3), pp. 233–249. DOI: 10.1177/0268580915578759
- Owolabi, B. O. (2015) The effects of students' housing on academic performance at the University of Ibadan in Nigerian. *International Journal of Scientific & Engineering Research*, 6(3), pp. 1118–1132.
- Parker, S. (2006) *Theory of urban experience*. Bologna, Il Mulino.
- Pow, C.-P. (2007a) Securing the "civilised" enclaves: Gated communities and the moral geographies of exclusion in (post)-socialist Shanghai. *Urban Studies*, 44(8), pp. 1539–1558. DOI: 10.1080/00420980701373503
- Pow, C.-P. (2007b) Constructing a new private order: Gated communities and the privatization of urban life in post-reform Shanghai. *Social and Cultural Geography*, 8(6), pp. 813–833. DOI: 10.1080/14649360701712511
- Pow, C.-P. (2009) Public intervention, private aspiration: Gated communities and the condominiumisation of housing landscapes in Singapore. *Asia Pacific Viewpoint*, 50(2), pp. 215–227. DOI: 10.1111/j.1467-8373.2009.01394.x
- Pribadi, D.O & Pauleit, S. (2016) Peri-urban agriculture in Jabodetabek Metropolitan Area and its relationship with the urban socioeconomic system. *Land Use Policy*, 55, pp. 256–274. DOI: 10.1016/j.landusepol.2016.04.008
- Quintal, D. (2006) *Gated communities in Sydney: A search for security*. Bachelor's thesis. New South Wales, University of New South Wales.
- Raposo, R. (2006) Gated communities, commodification and aestheticization: The case of the Lisbon metropolitan area. *GeoJournal*, 66(1–2), pp. 43–56. DOI: 10.1007/s10708-006-9015-2
- Remali, A. M. & Salama, A. M. (2016) A chronological exploration of the evolution of housing typologies in Gulf cities. *City Territory and Architecture*, 3(14), pp. 1–15. DOI: 10.1186/s40410-016-0043-z
- Rizzo, A. (2014) Rapid urban development and national master planning in Arab Gulf countries. Qatar as a case study. *Cities*, 39, pp. 50–57. DOI: 10.1016/j.cities.2014.02.005
- Roitman, S. (2005) Who segregates whom? The analysis of a gated community in Mendoza, Argentina. *Housing Studies*, 20(2), pp. 303–321. DOI: 10.1080/026730303042000331790
- Rosen, G. & Razin, E. (2008) The rise of gated communities in Israel: Reflections on changing urban governance in a neo-liberal era. *Urban Studies*, 46(8), pp. 1702–1722. DOI: 10.1177/0042098009105508
- Rudiawan, R. (2008) *Kajian pengembangan wilayah dan implikasinya terhadap bisnis dan investasi properti di Kabupaten Bandung Barat*. Bandung, Bandung Institute of Technology. Bandung, Bandung Institute of Technology.
- Ruoppila, S. & Kaehrik, A. (2003) Socio-economic residential differentiation in post-socialist Tallinn. *Journal of Housing and the Built Environment*, 18(1), pp. 49–73. DOI: 10.1023/A:1022435000258
- Salcedo, R. & Torres, A. (2004) Gated communities in Santiago: Wall or frontier. *International Journal of Urban and Regional Research*, 28(1), pp. 27–44. DOI: 10.1111/j.0309-1317.2004.00501.x
- Sanchez, T. W., Lang, R. E. & Dhavale, D. M. (2005) Security versus status? A first look at the census's gated community data. *Journal of Planning Education and Research*, 24(3), pp. 281–291. DOI: 10.1177/0739456X04270127
- Sandercock, L. (2003) *Cosmopolis II: Mongrel cities of the 21st Century*. London, Continuum.
- Stoyanov, P. & Frantz, K. (2006) Gated communities in Bulgaria: Interpreting a new trend in post-communist urban development. *GeoJournal*, 66(1–2), pp. 57–63. DOI: 10.1007/s10708-006-9016-1
- Sueca, N. P. & Fitriani, L. R. D. (2012) Profile gated community di Denpasar. *Prosiding Temu Ilmiah IPLBI*, pp. 45–48. Bandung, Bandung Institute of Technology.
- Tambunan, D. B. (2009) Atribut yang menjadi pertimbangan konsumen dalam membeli produk perumahan: Penelitian dan analisis conjoint. *Jurnal Manajemen Bisnis*, 2(2), pp. 141–153.
- Thuillier, G. (2005) Gated communities in the metropolitan area of Buenos Aires, Argentina: A challenge for town planning. *Housing Studies*, 20(2), pp. 255–271. DOI: 10.1080/026730303042000331763
- Townshend, I. J. (2006) From public neighborhoods to multi-tier private neighborhoods: The evolving ecology of neighbourhood privatization in Calgary. *GeoJournal*, 66, pp. 103–120. DOI: 10.1007/s10708-006-9010-7
- Webster, C, Wu, F. & Zhao, Y. (2006) *China's modern gated cities*. In: Glasze, G., Webster, C. & Frantz, K. (eds). *Private communities: Global and local perspectives*, pp. 153–169. Oxford, Routledge.
- Wilson-Doenges, G. (2000) An exploration of sense of community and fear of crime in gated communities. *Environment and Behavior*, 32(5), pp. 597–611. DOI: 10.1177/00139160021972694
- Winarso, H. (2005) City for the rich. In: *Cities of People: Papers of the 8th International Conference of the Asian Planning Schools Association Held on 11–14 September 2005 in Penang*, pp. 11–14. Penang, International Conference of the Asian Planning Schools Association.
- Winarso, H., Hudalah, D. & Firman, T. (2015) Peri-urban transformation in the Jakarta metropolitan area. *Habitat International*, 49, pp. 221–229. DOI: 10.1016/j.habitatint.2015.05.024
- Wu, F. (2005) Rediscovering the "gate" under market transition: From work-unit compounds to commodity housing enclaves. *Housing Studies*, 20(2), pp. 235–254. DOI: 10.1080/026730303042000331754
- Wu, F. & Webber, K. (2004) The rise of "foreign gated communities" in Beijing: Between economic globalization and local institutions. *Cities*, 21(3), pp. 203–213. DOI: 10.1016/j.cities.2004.03.002
- Xavier, G. (2008) *Gated and guarded communities-security concerns for elitist practice?* Paper presented at the 5th Asian Law Institute Conference, 22–23 May, Singapore. Typescript.
- Young, J. (1999) *The exclusive society: Social exclusion, crime and difference in late modernity*. London, Sage.
- Zaina, S., Zaina S. & Furlan, R. (2016) Urban planning in Qatar: Strategies and vision for the development of transit villages in Doha. *Australian Planner*, 53(4), pp. 286–301. DOI: 10.1080/07293682.2016.1259245

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Evaluating the roles of green and built-up areas in reducing a surface urban heat island using remote sensing data

Rapid urbanization has several negative effects on both the environment and human health. Urbanization has also become an important contributor to global warming. One of these effects is the urban heat island (UHI), which is caused by human activities and defined as the temperature difference between urban and surrounding rural areas. With rapid urbanization in the past few decades, Skopje has experienced remarkable UHI effects. To investigate the roles of built-up and green areas in a surface UHI, this article uses satellite data from Landsat ETM+ to analyse the land surface temperature and high-resolution Planet Scope DOVE data to analyse built-up and green areas. For geostatistical analyses, seventeen randomly selected subareas in Skopje were used.

The results show a significant correlation between the UHI and built-up areas, and strong correlation between green areas and areas not affected by the UHI, indicating that the UHI effect can be significantly weakened with additional green areas. One of the significant findings in the study is the ideal proportion of built-up (40%) and green areas (60%), where the UHI effect is weak, or in some cases prevented. For future studies, investigating other factors that may contribute to the UHI phenomenon is suggested.

Keywords: surface urban heat island, remote sensing, satellite imagery, urbanization, land surface temperature

1 Introduction

Rapid population growth in the last few decades has led to drastic urbanization in most parts of the world. Although urbanization is positive for developing countries, if it does not take place correctly it can negatively affect both the environment and human health (Morefield et al., 2018). One of the side effects of urbanization – along with the densification of built-up areas, increase in impervious surfaces, and lack of green spaces – is the appearance of the urban heat island (UHI) phenomenon. This term was first used in 1818 (Bristow et al., 2012). Since the early 1900s, the UHI intensity of hundreds of built-up areas around the world has been assessed (Stewart & Oke, 2009), and this field remains extensively studied in urban climatology (Souch & Grimmond, 2006). An UHI is defined as a temperature increase in built-up areas compared to their rural surroundings caused by human activities (Kaplan et al., 2018). If compared with the average temperature of green space and residential areas, the fundamental factor increasing air temperature and surface temperature in urban areas is the difference in solar radiation heating in built-up areas, especially around roads and commercial and industrial areas (Santamouris et al., 2011; Leal Filho et al., 2018). Although many factors affect UHIs, replacing the natural land cover with heat-absorbing surfaces is one of the greatest contributors to this phenomenon (Leal Filho et al., 2018). Based on their formation type, the techniques used to measure them, their impact, and mitigation methods, there are atmospheric and surface UHIs (Munn, 2002).

Whereas atmospheric UHIs are related to air temperature differences between urban and rural (green) areas, surface UHIs (SUHIs) can be defined by the temperature of the entire 3-D envelope of a surface (Fernando et al., 2001). SUHIs are typically present both day and night, but tend to be strongest during the day, when the sun is shining and the city accumulates heat. At night, built-up areas release this heat, and because the original green areas have been replaced by manmade structures the natural cooling effect is lost in the urban areas. Due to changes in the sun's intensity as well as the ground cover, the magnitude of UHI varies with the seasons, and thus SUHIs are typically strongest and highest in summer. The typical identification method for SUHIs is indirect measurements, such as remote sensing methods and techniques.

Over the years, various satellite remote sensing instruments equipped with thermal sensors have been used for mapping and monitoring SUHIs, such as the Moderate Resolution Imaging Spectroradiometer, or MODIS (Miao et al., 2009; Schwarz et al., 2011; Tomlinson et al., 2012), Landsat TM, ETM+ and OLI/TIRS (Zha et al., 2003; Chen et al., 2006;

Van der Hoeven & Wandl, 2018), and ASTER (Liu & Zhang, 2011), as well as a combination of these to analyse the Land Surface Temperature (LST) of the study areas. Although low-resolution sensors such as MODIS have been used for large areas, medium-resolution sensors such as Landsat and ASTER are more suitable for observing individual cities or smaller areas. Research on LST and UHIs has shown that surface temperature response is a function of different land cover (Owen et al., 1998), which prompted research on the relationship between LSTs and land cover, and especially vegetation abundance (Gallo & Owen, 1999; Weng, 2001; Weng et al., 2004; Chen et al., 2006).

In order to evaluate the roles of built-up and green areas in SUHIs, using medium and high spatial remote sensing data, this article addresses several research questions:

- What parts of Skopje are affected by UHIs?
- How are SUHIs, built-up areas, and green areas related?
- What is the ideal proportion of built-up and green areas in a subarea in order to eliminate the SUHI effect?

2 Methodology

Skopje is the capital of North Macedonia, located in the Balkan peninsula. The population of the country is estimated at 2.1 million, and the population of Skopje is estimated at more than 800,000. The city was built in the Skopje Valley, oriented on an east –west axis along the course of the Vardar River, which flows into the Aegean Sea in Greece. Skopje has an elevation of approximately 245 m and covers an area of approximately 572 km². The urban expansion of Skopje is limited by mountain ranges to the north and south, and thus the city has developed along the Vardar and the Serava, a small river that flows from the north. Over the last three decades, Skopje has undergone radical changes that have affected urban-planning processes (Stefanovska & Koželj, 2012). Over the past century, during which Skopje's population has grown more than tenfold, social changes have not only affected planning processes but also impacted the built fabric of the city. As a result, the city has been transformed by a diverse set of dynamics. Skopje is one of many cities that have been affected by the side effects of rapid urbanization. The differences between the temperature in the city and the surrounding areas have been investigated using meteorological measurements and thermal imaging as part of the climate change strategy of the city (City of Skopje, 2017). The results from the meteorological measurements showed differences up to 5°C in different parts of the city, and the results from thermal imaging showed a 12°C difference between the city centre and the rural surroundings. Kaplan et al. (2018) confirmed the presence of a UHI in Skopje using remote sensing data and also found a

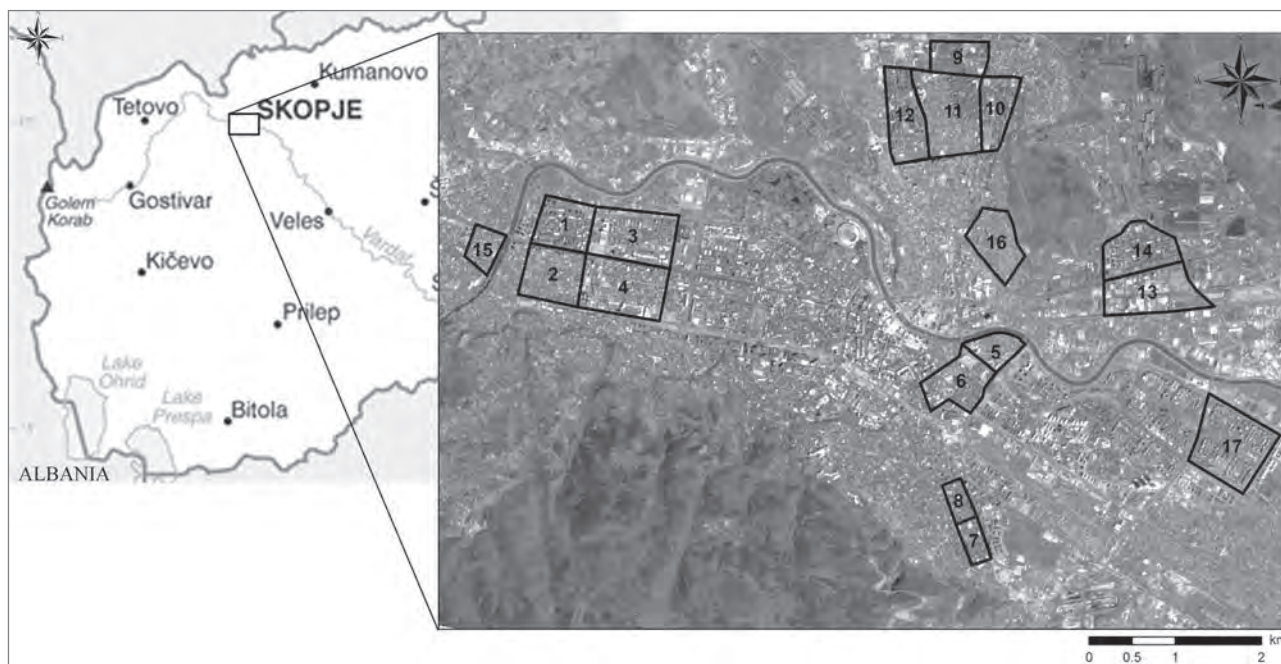


Figure 1: Skopje study area and subareas, DOVE satellite sensor (RGB, 4, 3, 2; author: Gordana Kaplan).

correlation between built-up areas and the UHI. Comparing meteorological data in the period between 2009 and 2019, drastic changes in the temperature can also be noticed. Thus, whereas the minimum temperature in August 2009 was measured at 14°C, in 2018 and 2019 it had risen to 17°C and 19°C, respectively. Similar is the case with the average and maximum temperatures, where the average temperature rose from 20°C to 30°C, and the maximum from 27°C to 32°C (WorldWeather, 2019).

In order to analyse the SUHI in Skopje, this study uses a thermal map retrieved from the Landsat ETM+ mapper with medium spatial resolution, and PlanetScope DOVE data were used for extracting the built-up and green areas in the subareas. The Landsat-7 images acquired since 2003 have a scan line corrector problem and only the middle part (c. 23km) of each scene has no data loss. Because this part fully covers the study area used in this article, no additional corrections were made. The PlanetScope DOVE data were downloaded from the Planet webpage, which operates with more than 175 PS satellites that collect multispectral imagery in four bands with a collection capacity of 300 million km² per day. The sensor used in this study collects four multispectral bands (NIR, RGB) with 3 m spatial resolution. In order to extract the urban and green areas from the high-resolution data in the subareas, a normalized difference vegetation index (NDVI, Equation 1) was used.

$$NDVI = \frac{NIR - Red}{NIR + Red}$$

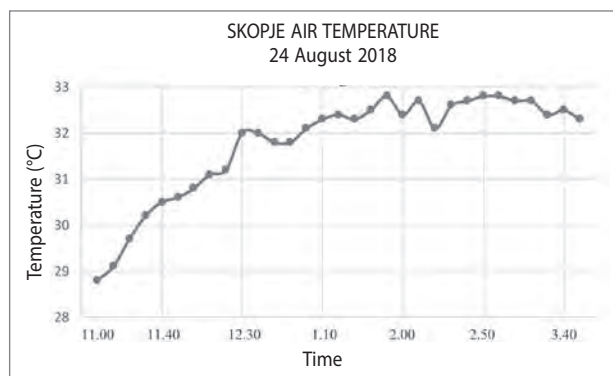


Figure 2: Skopje air temperature on 24 August 2018 (author: Gordana Kaplan).

Because Skopje has a continental–sub-Mediterranean climate, meaning the temperatures are high in the summer, this article uses satellite images acquired at the end of August 2017.

Both Landsat ETM+ and PlanetScope DOVE data were acquired in the summer, on 24 August 2018, when it was assumed that the SUHI effect is the strongest. In addition, to compare the LST and air temperature, air temperature data acquired in several locations in Skopje on the same date were used (Figure 2). As seen from Figure 2, the maximum temperature on the same day that the area was overpassed by the satellites was approximately 33°C.

As already stated, SUHIs can be best observed through thermal satellite sensors with LST data. The LST can be calculated using the Landsat thermal bands. Several studies can be found

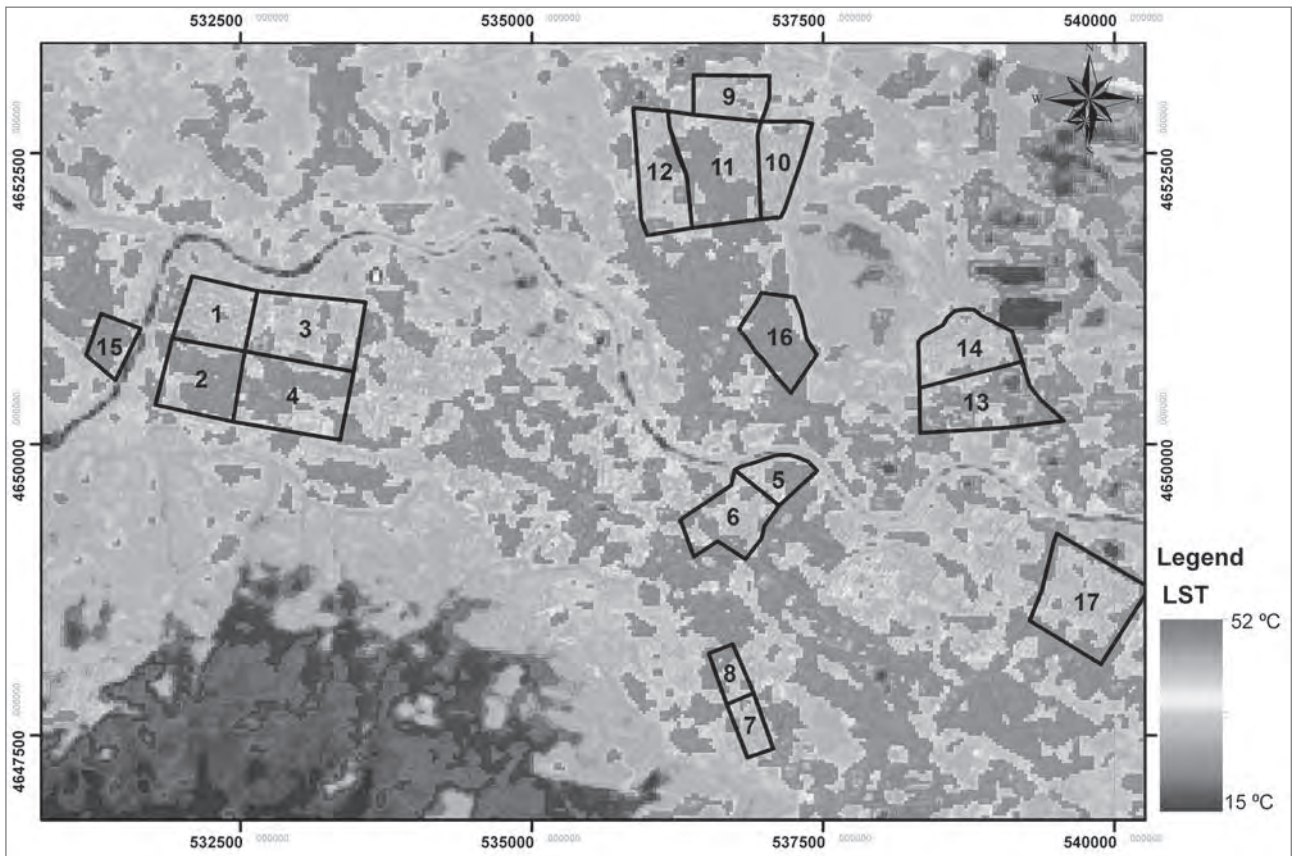


Figure 3: LST, SUHI map (Landsat ETM+) of Skopje (author: Gordana Kaplan).

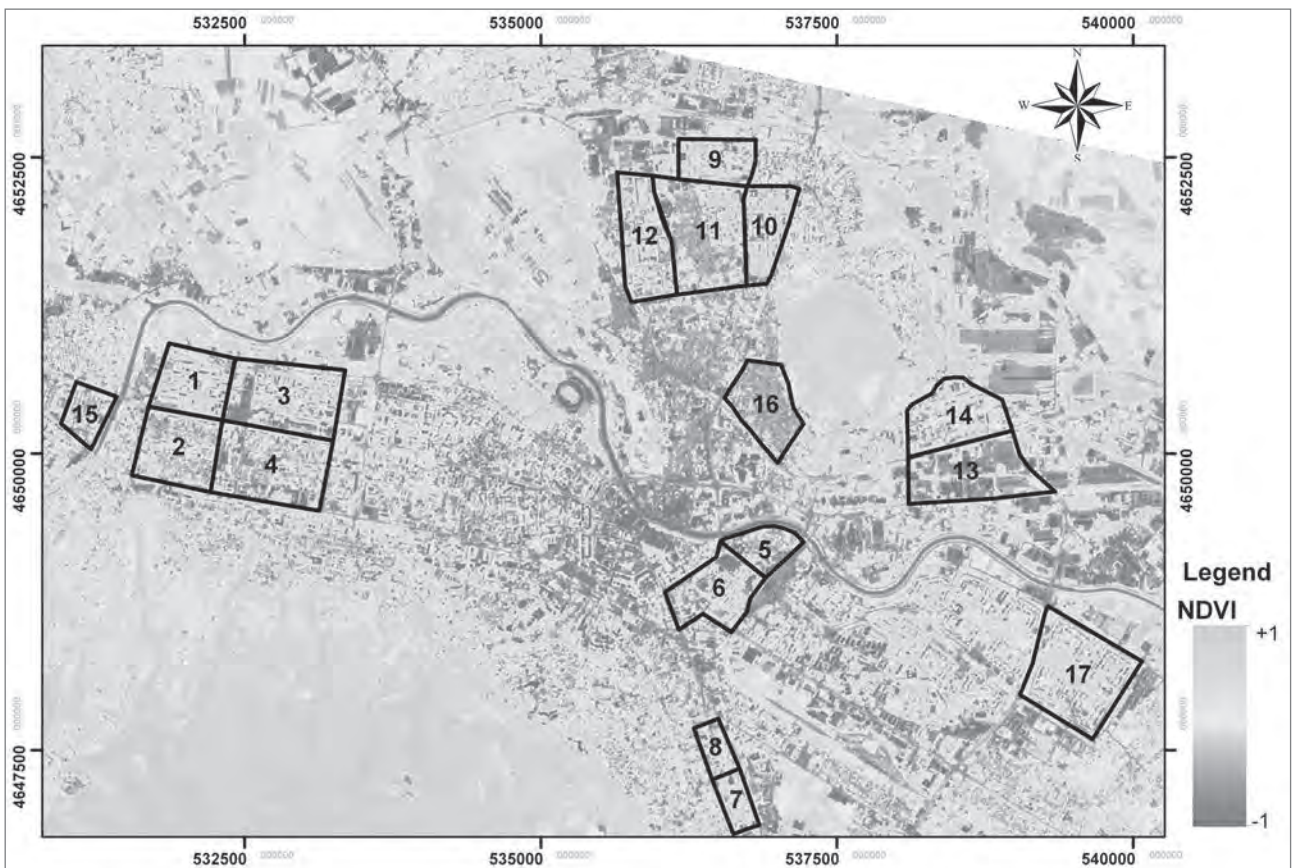


Figure 4: NDVI map of Skopje (author: Gordana Kaplan).

Table 1: Details of the satellite data used.

Detail	Satellite	
	Landsat ETM+	PlanetScope DOVE
Resolution	30 m	3 m
Bands	8	4
Acquisition date	24 Aug. 2018	24 Aug. 2018
Data used	LST	NDVI

on this topic in the literature (Ekercin et al. 2016). This article uses an algorithm developed by Avdan and Jovanovska (2016) that was properly adjusted for retrieving the LST map from Landsat ETM+. The adjustment was made by updating the coefficients of the thermal band that can be found in the meta-data of the satellite image.

$$K1_{kanal\ 6} = 666,09\ Wm^{-2}\ sr^{-1}\ \mu m^{-1} \quad (2)$$

$$K2_{kanal\ 6} = 1.282.71\ K \quad (3)$$

The comparison between the data used was made based on area results. Thus, after the LST map was retrieved, an SUHI map was extracted. Because an SUHI is defined as a temperature difference between the rural and urban areas, an SUHI can be calculated with simple equations. Ma et al. (2010) proposed the following equation for calculating an SUHI, which has been successfully used in many studies (Kaplan et al., 2018):

$$SUHI = \mu + \frac{\sigma}{2} \quad (4)$$

where μ is the mean LST value of the study area and σ is the standard deviation of the LST. Areas that have higher temperature values than the SUHI are considered areas highly affected by the UHI phenomenon.

Afterward, statistical analyses of the SUHI area and the built-up and green areas were made based on the reclassified images according to the LST and SUHI analyses. Thus, both green and built-up areas were extracted from the PlanetScope DOVE satellite image (Planet Team, 2017), and the LST, SUHI, and areas not affected by UHIs were extracted as areas in m^2 and then statistically and visually compared. Details of the data are given in Table 1.

3 Results and discussion

Similar to the results of the previous study, the results of this study indicate the presence of an SUHI in several parts of Skopje. The SUHI analyses showed that areas with LSTs higher than $34^{\circ}C$ are areas affected by the SUHI (Figure 3). The results show that the SUHI effect is usually the strongest in the dense built-up areas, which can be confirmed by the results of the NDVI analyses shown in Figure 4.

Table 2: Results of geostatistical analyses (%).

ID no.	Urban	Green	SUHI
1	35.64	64.36	7.82
2	65.96	34.04	71.14
3	54.40	45.60	24.87
4	69.89	30.11	57.49
5	77.96	22.04	45.96
6	63.54	36.46	39.21
7	28.61	71.39	8.58
8	56.38	43.62	44.65
9	40.35	59.65	9.81
10	35.66	64.34	8.12
11	63.82	36.18	51.26
12	46.39	53.61	21.53
13	75.16	24.84	73.32
14	42.71	57.29	12.41
15	66.47	33.53	76.14
16	89.10	10.90	85.89
17	39.56	60.44	31.79

For every subarea of Skopje, four parameters were extracted: built-up and green areas, and areas affected and not affected by the SUHI phenomenon (Table 2). The results showed a significantly high correlation between built-up areas and the SUHI ($r = 0.92$), and a high correlation between green canopy areas and areas not affected by the SUHI ($r = 0.95$). In addition, the coefficients of determination for the same comparisons are also significantly high, indicating that more than 84% of the SUHI can be explained by the linear relation with the built-up areas (Figure 5), and 90% of the areas not affected by UHIs can be explained by the linear relation with the green canopy in the study areas (Figure 5).

As can be seen from the results, UHIs are strongly connected with built-up areas in a specific neighbourhood. Thus, an ideal proportion should be found whereby the built-up area does not cause the UHI effect, or at least weakens its effects. For this purpose, the results were also converted into percentage values and statistical analyses were made. In most of the cases, the study areas that were covered by more than 40% built-up area showed strong SUHI effects (Figure 6). The visual comparison, however, showed that the 40% needs to be equally distributed across the area.

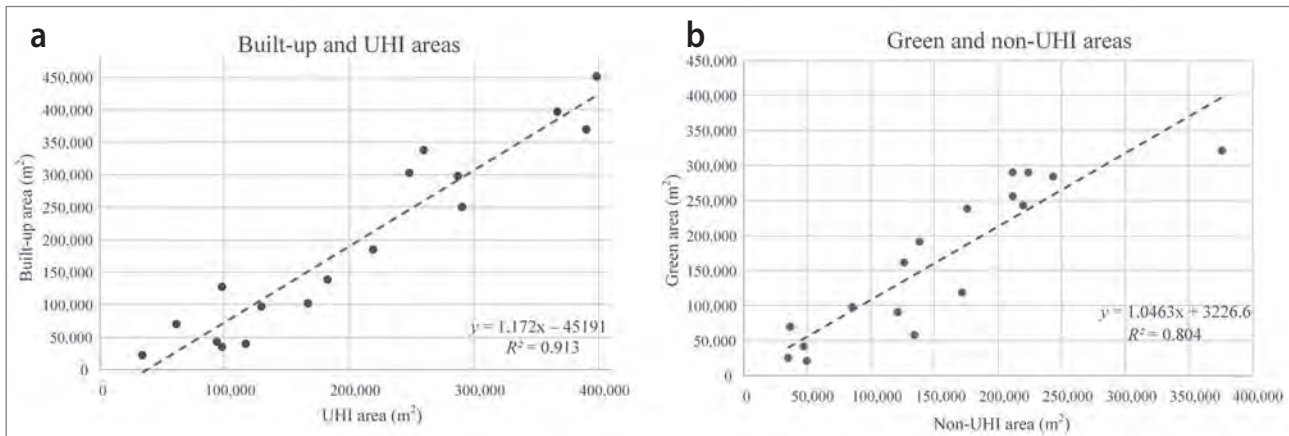


Figure 5: a) built-up area and UHI correlation; b) green canopy and non-UHI correlation (author: Gordana Kaplan).

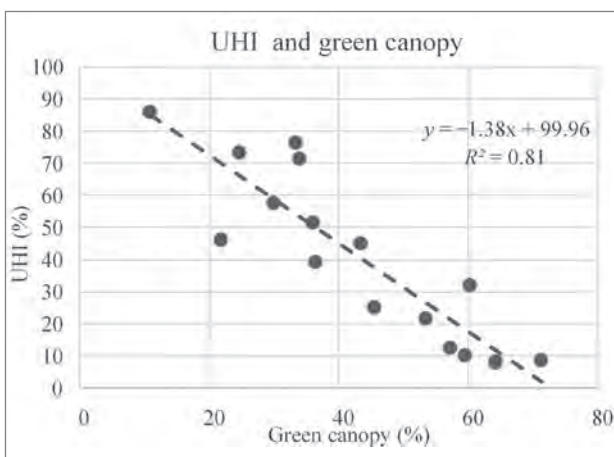


Figure 6: UHI and green canopy correlation (author: Gordana Kaplan).

As seen from Figure 6, the UHIs and green canopy areas are inversely correlated, which means that UHIs can be weakened with green areas. However, this is the case for 81% of the areas studied, meaning there are other factors that affect areas with the UHI phenomenon. As can be seen from the visual comparisons, one of these factors is the density of the built-up area. For example, whereas subareas numbers 6 and 11 have approximately same percentage of built-up area (63.5% and 63.8% respectively), subarea 11 has approximately 11% more area affected by an UHI due to built-up area density. The best results were seen in subareas 1, 7, 9, and 10, where the UHI areas were lower than 10% and the built-up areas did not exceed 40%.

The results of this study confirm the current situation in Skopje, where the temperature differences between the city and the surrounding areas are up to 12°C. The UHI phenomenon can also be noticed from the meteorological data in the period between 2009 and 2019, where there is a difference up to 10°C on average. These changes have been noticed by the authorities, and since 2016 detailed investigations on this topic have been ongoing. At the end of 2018, the authorities

published an action plan for mitigating UHIs in Skopje. The action plan was created based on the guidelines of the United States Environmental Protection Agency, which is responsible for UHI mitigation in the United States. The main strategies for reducing UHIs are increasing green areas, installing green roofs, cool reflective roofs, and cool pavements, and utilizing smart growth practices. The action plan also aims to plant one million trees. The results of this study may be useful for determining in advance areas for planting trees and other green areas.

4 Conclusion

This article investigated the SUHI phenomenon in Skopje using Landsat ETM+ imagery and evaluated the urban and green canopy roles in SUHI intensity using high-resolution imagery from the Planet Scope DOVE satellite. Because the presence of a UHI in Skopje was confirmed in another study (Kaplan et al., 2018), this article analysed seventeen randomly selected subareas, seeking to answer several research questions. The areas differed in size, location, and UHI effect. Thus, in order to investigate the relation between the urban areas, green areas, and areas affected by UHIs, several geostatistical analyses were carried out. The results of this study indicate that several parts of Skopje have been affected by the UHI phenomenon.

As expected, the results showed a high correlation between the SUHI and the built-up area ($R^2 = 84$), indicating that the SUHI is caused by human activities in the study area. Proportionally, there is a strong correlation between the green and non-UHI areas ($R^2 = 90$), indicating that a green canopy can significantly weaken the UHI/SUHI effect. A comparison with the meteorological data collected on the same day the satellite carrying a thermal sensor overpassed the area showed that the SUHI is present in areas where the land surface temperature is higher than the measured air temperature.

The results of this study indicate that 81% of the time UHIs in Skopje are caused by human activities or built-up areas. Another factor affecting UHIs is the density of the built-up and green areas. This study showed that ideal urban planning with which UHIs can be avoided or strongly weakened comprises 40% built-up space and 60% green canopy. In order to avoid a UHI effect, built-up areas should be separated from each other and surrounded by a green canopy. This study can be used by both city planners and environmental engineers in decision-making for mitigating UHI effects, which can be harmful to both the environment and human health. For future studies, it is recommended that further investigations be carried out of other factors that may be affecting built-up areas with a UHI. It is also recommended that the ratio be determined between green and built-up areas for mitigating UHIs in other study areas.

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References

- Avdan, U. & Jovanovska, G. (2016) Algorithm for automated mapping of land surface temperature using LANDSAT 8 satellite data. *Journal of Sensors*, 2016, Article ID 1480307. DOI: 10.1155/2016/1480307
- Bristow, R. S., Blackie, R. & Brown, N. (2012) Parks and the urban heat island: A longitudinal study in Westfield, Massachusetts. In: Fisher, C. L. & Watts, C. E., Jr. (eds.) *Proceedings of the 2010 Northeastern Recreation Research Symposium. Gen. Tech. Rep. NRS-P-94*, pp. 224–230. Newtown Square, PA, U.S. Department of Agriculture, Forest Service, Northern Research Station. DOI: 10.1007/s10980-010-9515-9
- Chen, X.-L., Zhao, H.-M., Li, P.-X. & Yin, Z.-Y. (2006) Remote sensing image-based analysis of the relationship between urban heat island and land use/cover changes. *Remote Sensing of Environment*, 104(2), pp. 133–146. DOI: 10.1016/j.rse.2005.11.016
- City of Skopje (2017) *Resilient Skopje, Climate change strategy report*. Skopje.
- Ekercin, S., Orhan, O. & Dadaser-Celik, F. (2016) Investigating land surface temperature changes using Landsat-5 data and real-time infrared thermometer measurements at Konya closed basin in Turkey. *International Journal of Engineering and Geosciences*, 4(1), pp. 16–27. DOI: 10.26833/ijeg.417151
- Fernando, H., Lee, S., Anderson, J., Princevac, M., Pardyjak, E. & Grossman-Clarke, S. (2001) Urban fluid mechanics: Air circulation and contaminant dispersion in cities. *Environmental Fluid Mechanics*, 1(1), pp. 107–164. DOI: 10.1023/a:1011504001479
- Gallo, K. P. & Owen, T. W. (1999) Satellite-based adjustments for the urban heat island temperature bias. *Journal of Applied Meteorology*, 38(6), pp. 806–813. DOI: 10.1175/1520-0450(1999)038<0806:sbaftu>2.0.co;2
- Kaplan, G., Avdan, U. & Avdan, Z. Y. (2018) *Urban heat island analysis using the Landsat 8 satellite data: A case study in Skopje, Macedonia*. Skopje, Multidisciplinary Digital Publishing Institute Proceedings. DOI: 10.3390/ecrs-2-05171
- Leal Filho, W., Icaza, L. E., Neht, A., Klavins, M. & Morgan, E. A. (2018) Coping with the impacts of urban heat islands. A literature based study on understanding urban heat vulnerability and the need for resilience in cities in a global climate change context. *Journal of Cleaner Production*, 171, pp. 1140–1149. DOI: 10.1016/j.jclepro.2017.10.086
- Liu, L. & Zhang, Y. (2011) Urban heat island analysis using the Landsat TM data and ASTER data: A case study in Hong Kong. *Remote Sensing*, 3(7), pp. 1535–1552. DOI: 10.3390/rs3071535
- Ma, Y., Kuang, Y. & Huang, N. (2010) Coupling urbanization analyses for studying urban thermal environment and its interplay with biophysical parameters based on TM/ETM+ imagery. *International Journal of Applied Earth Observation and Geoinformation*, 12(2), pp. 110–118. DOI: 10.1016/j.jag.2009.12.002
- Miao, S., Chen, F., LeMone, M. A., Tewari, M., Li, Q. & Wang, Y. (2009) An observational and modeling study of characteristics of urban heat island and boundary layer structures in Beijing. *Journal of Applied Meteorology and Climatology*, 48(3), pp. 484–501. DOI: 10.1175/2008jamc1909.1
- Morefield, P., Fann, N., Grambsch, A., Raich, W. & Weaver, C. (2018) Heat-related health impacts under scenarios of climate and population change. *International Journal of Environmental Research and Public Health*, 15(11), p. 2438. DOI: 10.3390/ijerph15112438
- Munn, T. (2002) *Encyclopedia of global environmental change*. Chichester, UK, Wiley.
- Owen, T., Carlson, T. & Gillies, R. (1998) An assessment of satellite remotely-sensed land cover parameters in quantitatively describing the climatic effect of urbanization. *International Journal of Remote Sensing*, 19(9), pp. 1663–1681. DOI: 10.1080/014311698215171
- Planet Team (2017) *Planet application program interface: In space for life on Earth*. San Francisco, CA. Available at: <https://api.planet.com> (accessed 21 Sept. 2019).
- Santamouris, M., Synnefa, A. & Karlessi, T. (2011) Using advanced cool materials in the urban built environment to mitigate heat islands and improve thermal comfort conditions. *Solar Energy*, 85(12), pp. 3085–3102. DOI: 10.1016/j.solener.2010.12.023
- Schwarz, N., Lautenbach, S. & Seppelt, R. (2011) Exploring indicators for quantifying surface urban heat islands of European cities with MODIS land surface temperatures. *Remote Sensing of Environment*, 115(12), pp. 3175–3186. DOI: 10.1016/j.rse.2011.07.003
- Souch, C. & Grimmond, S. (2006) Applied climatology: Urban climate. *Progress in Physical Geography*, 30(2), pp. 270–279. DOI: 10.1191/0309133306pp484pr
- Stefanovska, J. & Koželj, J. (2012) Urban planning and transitional development issues: The case of Skopje, Macedonia. *Urbani izziv*, 23(1), pp. 91–100. DOI: 10.5379/urbani-izziv-en-2012-23-01-002
- Stewart, I. & Oke, T. (2009) *Newly developed "thermal climate zones" for defining and measuring urban heat island magnitude in the canopy layer*. Paper presented at the Eighth Symposium on Urban Environment, 11–15 January, Phoenix, AZ. Typescript.
- Tomlinson, C., Chapman, L., Thornes, J. and Baker, C. (2012) Derivation of Birmingham's summer surface urban heat island from MODIS satellite images. *International Journal of Climatology*, 32(2), pp. 214–224. DOI: 10.1002/joc.2261

Van der Hoeven, F. & Wandl, A. (2018) Hotterdam: Mapping the social, morphological, and land-use dimensions of the Rotterdam urban heat island. *Urbani izziv*, 29(1), pp. 58–72.

DOI: 10.5379/urbani-izziv-en-2018-29-01-001

Weng, Q. (2001) A remote sensing? GIS evaluation of urban expansion and its impact on surface temperature in the Zhujiang Delta, China. *International Journal of Remote Sensing*, 22(10), pp. 1999–2014.

DOI: 10.1080/01431160152043676

Weng, Q., Lu, D. & Schubring, J. (2004) Estimation of land surface temperature–vegetation abundance relationship for urban heat island studies. *Remote Sensing of Environment*, 89(4), pp. 467–483.

DOI: 10.1016/j.rse.2003.11.005

WorldWeather (2019) *Skopje monthly climate averages*. Available at: <https://www.worldweatheronline.com/skopje-weather-averages/karpos/mk.aspx> (accessed 21 Sept. 2019).

Zha, Y., Gao, J. & Ni, S. (2003) Use of normalized difference built-up index in automatically mapping urban areas from TM imagery. *International Journal of Remote Sensing*, 24(3), pp. 583–594.

DOI: 10.1080/01431160304987

UDC: 911.52+911.53:347.823.2:349.414
DOI: 10.5379/urbani-izziv-en-2019-30-02-005

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Patterns of using places for recreation and relaxation in peri-urban areas: The case of Lake Podpeč, Slovenia

The paper addresses the issues of place capacity for occupancy for rest and recreation in the context of peri-urban landscapes of high natural or cultural values. It sets these issues in the frame of bottom-up approaches, considering qualitative-, small- and slow-data-oriented methods and techniques, using observation & behaviour mapping. It focuses on designing the concept of a natural site's carrying capacity and evaluating an area's carrying capacity for specific use. It proceeds from a study conducted by Goličnik Marušić (2015), which showed the prudence of addressing the development and planning of green infra-

structure from the perspective of user needs and habits. By including the concept of an area's carrying capacity, it also incorporates the conservation aspect. Based on data obtained through observation and mapping, the article comments on current use and users in terms of their age, use of a place, frequency of activities, and type of activities in the case of Lake Podpeč, a popular recreational site at the fringe of Ljubljana marsh, Slovenia.

Key words: carrying capacity, green infrastructure, behaviour mapping, peri-urban landscape, spatial planning

1 Introduction

This article studies the use of peri-urban landscapes for recreation, and it focuses on developing and testing the concept of an area's recreational carrying capacity. It is based on commentaries relating to the observation and behaviour mapping of spatial use patterns carried out in the pilot area examined as part of the project Landscape and Open Space Development in Alpine Metropolitan Areas (LOS_DAMA!, 2018), which was approved in the second call for project proposals within the transnational territorial cooperation programme Alpine Space 2014–2020. The project deals with the landscape surrounding urban areas as part of wider networks of green infrastructure, which is attractive due to its natural and cultural recourses and heritage. Because of its diversity and location, it is often exposed to pressures connected with various uses. Based on concrete observations of the Lake Podpeč area, a popular recreational site on the outskirts of Ljubljana, some reflections are presented on potential spatial pressures arising from the need for recreation and relaxation, and the concept of an area's carrying capacity for specific use is defined. Behaviour observation and mapping were performed for this pilot area. As a deep sinkhole with a permanent outflow, Lake Podpeč has been protected as a geomorphological natural asset of national significance, and the wider area of the lake has been protected as a hydrological and ecosystem natural asset of national significance, which is also a natural monument. The lake's wider surroundings are part of the outer conservation area of Ljubljana Marsh Nature Park (ARSO, 2019).

Green infrastructure as an interpretation of sustainable and climate-change adaptation in spatial planning presents diverse opportunities to mediate adverse effects while simultaneously delivering environmental, economic, and social benefits, including human health and well-being, to contemporary urban dwellers. Over the past decades, the concept has largely become established as a counterweight to grey infrastructure (i.e., the built environment). Its role first and most pronouncedly came to the fore in relation to mitigating urban climate change (e.g., Gill et al., 2007). In terms of content and technology, just like in spatial planning in general, a GIS-based approach became widely established for keeping a record of green infrastructure elements, with an emphasis on interpreting data on planned use and morphological characteristics (e.g., Chang et al., 2011). Recently, after many studies demonstrating the positive role played in human health by natural or green open urban spaces (e.g., Ward Thompson, 2013), this role has also been transferred to green infrastructure. After the increasing establishment of the concept of ecosystem services, the understanding of green infrastructure as the bearer of individual aspects of ecosystem services (i.e., its mainte-

nance, regulatory, cultural, and support roles) is also on the rise, calling for a multidisciplinary approach to address green infrastructure (e.g., Tzoulas et al., 2007; Taylor & Hochuli, 2017), as well as to assess the multifunctional role of green infrastructure for maximizing ecosystem services (Meerow & Newell, 2016).

In the face of increasing justifications of the importance of biodiversity, nature protection, and spatial planning through the concepts of green infrastructure (e.g., European Commission, 2013, 2016), ecosystem services (e.g., European Commission, 2018), and nature-based solutions (e.g., Raymond et al., 2017), from the spatial planning perspective it is key to establish new mechanisms and not only look at spatial elements from the viewpoint of their physical form and classification into grey, blue, or green infrastructure, but also to understand this as a system of natural and human processes as suggested, for example, by Goličnik Marušić and Praper Gulič (2018). Similarly, Parker and Zegoni de Baro (2019) reason that green infrastructure's focus could be expanded to consider broader contexts that may be associated with green infrastructure.

Accordingly, this article discusses green infrastructure at the fringe of these broader contexts associated with it; that is, in terms of its appeal for recreational use. Selected elements of green infrastructure are not elucidated directly in terms of their morphological, structural, or ecological characteristics; instead, the article focuses on interpreting these places from the viewpoint of the recreational activities they encourage or generate. Such an approach to understanding or examining green infrastructure is new, and it is directly related to the hypothesis stated in this research: the type, frequency, intensity of use, and its dimensions can address the carrying capacity of a place and thereby reflect the occupancy volume of a recreation site that the place or natural surroundings can sustain indefinitely.

2 Methodology and data

Based on the observation and behaviour mapping method (e.g., Goličnik & Ward Thompson, 2002; Goličnik, 2006), in advance the authors produced the observation schedule and protocol, selected the observation recording method, and prepared the symbols and maps for recording the observations. The observations and behaviour recording were carried out from 9 June to 3 July 2018, which is when the school year ended and the summer holiday began, and on 19 August, when the summer holiday was drawing to an end. The entire day was divided into sequences of morning and afternoon observations. Morning observations were performed from 10 am to 1 pm, and afternoon observations were carried out from 2 pm

Table 1: Coding system for entering manually collected data into ArcGIS software.

Variable	Point entries		Polygon entries	
	Code	Description/class	Code	Description/class
Activity	1	Boating	1	Boating
	2	Walking	2	Walking
	3	Dog walking		
	4	Playing	4	Playing
	5	Bicycling		
	6	Lying	6	Lying
	7	Swimming	7	Swimming
	8	Fishing	8	Fishing
	9	Sitting	9	Sitting
	10	Sitting with a dog		
	11	Standing	11	Standing
		12	Picnicking	
Age	1	≤ 5 years = child/family	4	Family
	2	6 –12 years = child/family	4	Family
	3	13 –19 years =teenager	1	Teenager
	4	20 –34 years = young adult	2	Young adult
	5	35 –50 years = young adult	2	Young adult
	6	51 –65 years = older adult	3	Older adult
	7	> 65 years = older adult	3	Older adult
Sex	1	Male	1	Group of men
	2	Female	2	Group of women
			3	Mixed group
			4	Family
Group size			3	3 people
			4	4 people
			5	5 –10 people
			6	10 people or more
Part of day	1	10 am – 12 noon	1	10 am – 12 noon
	2	12 noon – 2 pm	2	12 noon – 2 pm
	3	10 am – 2 pm	3	10 am – 2 pm
	4	2 pm – 5 pm	4	2 pm – 5 pm
	5	5 pm – 7 pm	5	5 pm – 7 pm
	6	2 pm – 7 pm	6	2 pm – 7 pm
Part of week	1	Mon –Fri	1	Mon –Fri
	2	Saturday –Sunday / holiday	2	Saturday –Sunday / holiday
Weather	1	Sunny	1	Sunny
	2	Partly cloudy	2	Partly cloudy
	3	Cloudy	3	Cloudy
	4	Rainy	4	Rainy
Temperature	1	15 –19°C	1	15 –19°C
	2	20 –24°C	2	20 –24°C
	3	25 –29°C	3	25 –29°C
	4	30 –34°C	4	30 –34°C
	5	≥ 35°C	5	≥ 35°C



Figure 1: High place occupancy: Visitors to the lake on 17 June 2018; and visit at midday on 19 August 2018 (photo: Manca Dremel).



Figure 2: Contrast between low and high occupancy: Visit during poor weather, 29 June 2018; Looking for shade, 19 August 2018 (photo: Manca Dremel).

to 7 pm. At Lake Podpeč, where the structural and morphological characteristics of the area make it possible to observe the entire area of use at once, an individual observation, which entails glancing over the area to estimate users' age, sex, and activity, lasted thirty minutes. Based on the observation intervals twenty-eight observations were performed. Afternoon observations were often interrupted or made impossible by summer storms. Observations were planned to be carried out on both weekdays and weekends, but initial observations showed that in terms of visit intensity it was key to obtain weekend data. The final shares of observation days at Lake Podpeč were as follows: four weekend days and six weekdays. The results of observations performed at Lake Podpeč are presented in detail below and commented on four days with significant numbers of visitors.

Observation data were captured manually, in which individuals or couples were recorded as point symbols expressing the user's type of activity and sex. They were additionally furnished with codes for the age group an individual belonged to and for the

time of stay or the duration of the spatial activity. If the activity involved three or more individuals, the areas of the groups were mapped, with symbols denoting the type of activity and codes for the group's composition (age and sex) and size (the number of individuals in a group) added. In addition to basic records on visitors' activity, location, time of stay, age, and sex, data explaining other circumstances were also gathered for all variables (individuals and groups): the part of the day and week, and basic information on the weather. OpenStreetMap material formed the cartographic basis for creating the behaviour maps, and ArcGIS (by Esri) software was used to convert the manually collected data into digital form. Individuals were entered as point-type variables and groups as polygon-type variables. Every entry was ascribed an identification number and was coded according to the coding system presented below.

3 Analysis

The current recreational use was analysed and commented on in terms of a set of parameters that can determine or char-

acterize people’s use of places. The basic descriptive analyses derive from the data directly collected and comment on the use of places in terms of the number of visitors, the type of socializing (individually, as a couple, or in a group), the time of visit (morning, afternoon, weekend, or weekdays), and the visitors’ age group (children, teenagers, young adults, older adults, and the elderly). Other derived data, such as the type of activity (actual and performed in groups: active, passive, or performed while passing through the place), the manner of occupying a place (how; locations and distances between user(s) or user groups; the place filled up by visitors), the frequency of activities (frequent, occasional, or rare), and their intensity (the number of people involved in the same activity), were important for generating the concept of a place’s carrying capacity for recreational use. The findings of these analyses are presented in the three subsections below.

3.1 Basic descriptive analyses

The largest number of visitors to Lake Podpeč were recorded on Sunday, 17 June 2018, when the observation and mapping were performed in the afternoon (2 pm to 7 pm) and on Sunday, 19 August 2018, when the behaviour observation and mapping were carried out in the morning (10 am to 2 pm). In both cases, approximately three hundred people were recorded in the area observed. Comments on the two selected days are presented comparatively to other days or in terms of the intensity and characteristics of weekend visits.

The cumulative behaviour map of people’s use of places on all the days observed shows the locations of the places used for both individuals (point symbols) and groups (a simplified presentation using circles of various sizes). The cumulative behaviour map shows people’s use of places and the spatial distribution of uses on all the days observed, drawing attention to the extent of pressure on the area in terms of the density and intensity of uses. The map clearly shows which parts are used more and which are used less, forming the basis for further analyses of the actual uses, their intensity, frequency, compatibility, and so on.

A detailed analysis of activities at Lake Podpeč showed that most visitors tend to sit on the grassy edge of the lake on both weekdays and weekends, and that the second most frequent activity is lying in the grass on weekends and taking walks on weekdays. Something similar is also confirmed by the analysis of people’s use of places when it comes to groups (three or more people together): the largest number of groups were seen sitting, swimming, or walking. A comparison of people’s use of places on weekends and weekdays shows that among water activities swimming is more common on weekends and fishing on weekdays.

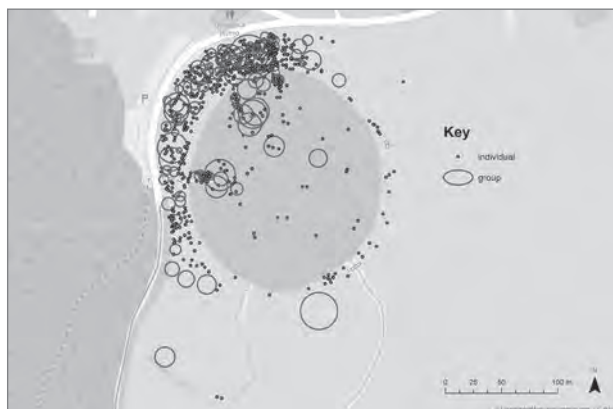


Figure 3: Cumulative behaviour map for Lake Podpeč, June –August 2018 (illustration: Nevenka Mihevc, source: OpenStreetMap and field data).

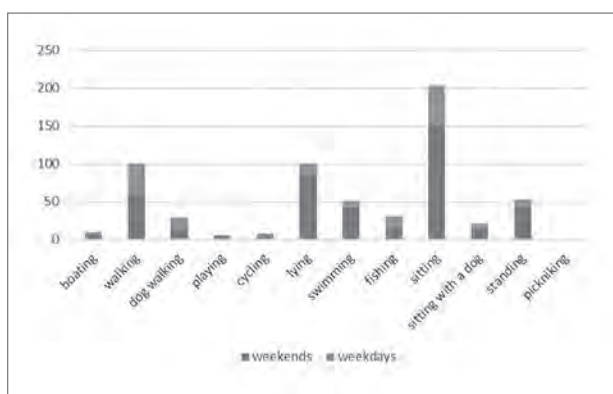


Figure 4: Number of visitors by activity over the entire observation period (illustration: Barbara Goličnik Marušič).

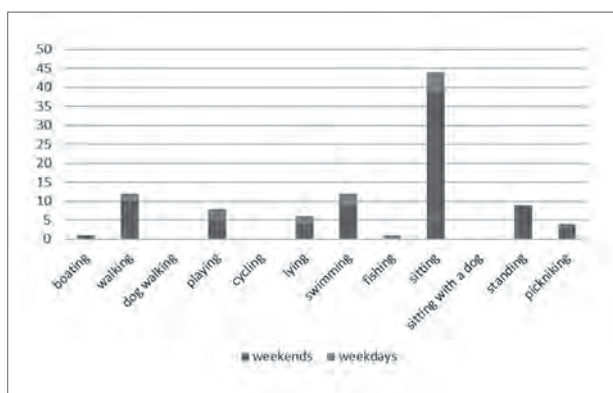


Figure 5: Number of groups (regardless of size) over the entire observation period (illustration: Barbara Goličnik Marušič).

In addition to determining the cumulative effects of pressures on an area, it is also important to identify how the area is being used or filled up. The characteristics of filling up the place during the day are confirmed by the data on people’s use of the place on low-visit days, based on which it can be concluded that the place is used sequentially. Figure 6 compares low-visit days (a and b) with a peak day (c). Due to the characteristics and layout of the place, the areas close to the

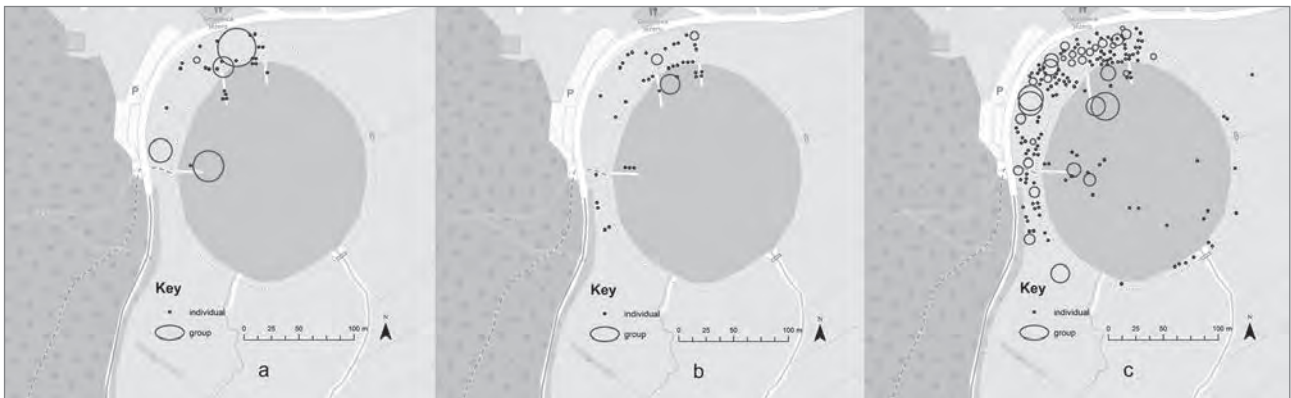


Figure 6: Ways of filling up the place based on use recorded on three different days: a) 15 June 2018, b) 26 June 2018, and c) 17 June 2018 (illustration: Nevenka Mihevc, source: OpenStreetMap and field data).

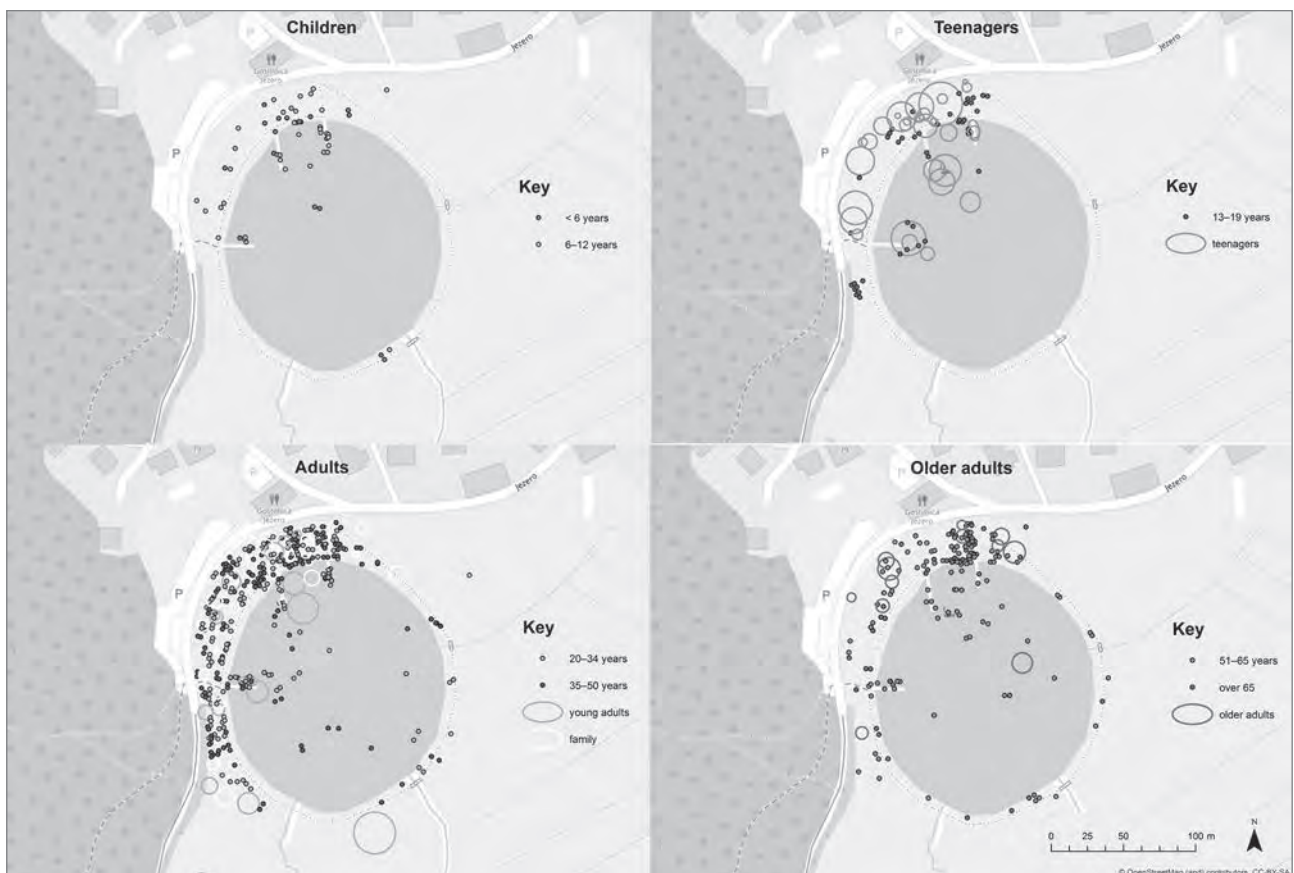


Figure 7: People's use of the place by age group (illustration: Nevenka Mihevc, source: OpenStreetMap and field data).

piers and those that offer shade are filled up first, after which the area between the two piers starts to slowly fill up as well. Figure 6c shows that when the area between the piers fills up to the extent allowing users to still feel comfortable, the western edge of the lake begins to gradually fill up as well, followed by the southern edge (predominantly with activities that do not last long).

The analyses show that Lake Podpeč is a popular destination for all age groups. Teenagers predominantly go there in large

groups and engage in both shore and water activities as a group. Families make up the smaller groups observed in the area. Further analysis shows that children under six usually do not move away from the place where the family is staying or are always accompanied by adults. Young adults (20–34 years) and families usually come in smaller groups. In turn, older adults (51–65 years) also come in large groups and, interestingly, they come to Lake Podpeč to swim vigorously. People over 65 usually take walks.

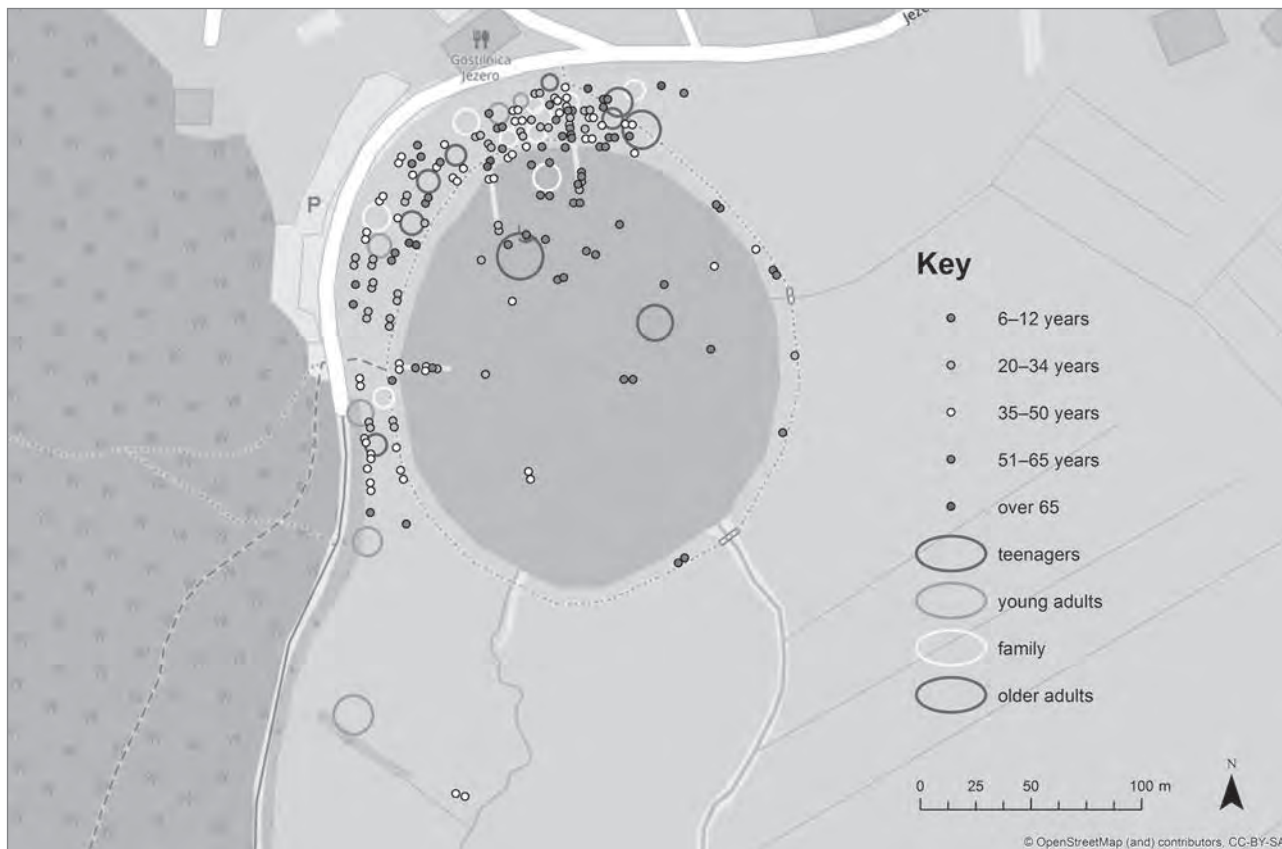


Figure 8: People’s use of the place on a typical day (illustration: Nevenka Mihevc, source: OpenStreetMap and field data).

A typical day at Lake Podpeč shows that families and older adults tend to linger in the shade on the northern shore. Young adults are evenly distributed from the shady part to the southern part of the western lake shore, either individually or in groups, and older adults swim the most. The edge of the lake overgrown with natural vegetation is used for walks around the lake, but not for other, longer activities.

3.2 Type of activities

Data analyses were performed, using a method adapted from Goličnik (2007), according to which activities were divided into three groups: active outdoor activities (i.e., active presence in a place such as playing with a ball), passive outdoor activities (i.e., passive presence in a place such as lying down or sitting), and activities performed while passing through the place (i.e., transition through a place such as jogging or walking). The analyses show that active outdoor activities at Lake Podpeč are mainly tied to the water environment: swimming and playing in the water. With regard to active and constantly present shore activities, certain groups were observed that had picnics on the shore and engaged in ball games or tag (children). To illustrate this, Figure 10 presents behavioural patterns of using the place by activity on the afternoon of Sunday, 17 June 2018, and on the morning of Sunday, 19 August 2018.

3.3 Frequency and intensity

Further analyses focused on the frequency of a specific activity and the assessment of intensity of its pressure on the environment. Frequent activities are considered those that were recorded on over 66% of observation days, occasional activities are those that occurred in 33 to 66% of observations, and rare activities are those recorded in fewer than 33% of observations. The analysis shows that water activities between the north piers and along the western pier, and activities on the level banks of the lake’s western edges are frequent. This area is thus practically always used, and it is currently used for both passive and active activities. The map showing active individuals indicates that people tend to sit or lie on the grass closer to the water’s edge (on the banks between the piers).

A basic analysis of the maps shows which parts are usually used for frequent activities and which ones for rare activities, which consequently indicates which micro locations can be expected to be under greater pressure. Comparing the maps also shows that occasional and always expected or frequent activities are common on days with lots of visitors, and that other activities in addition to these are common on days when visits are low. The frequency analysis is important because it reveals that not only expected and usual activities (i.e., those

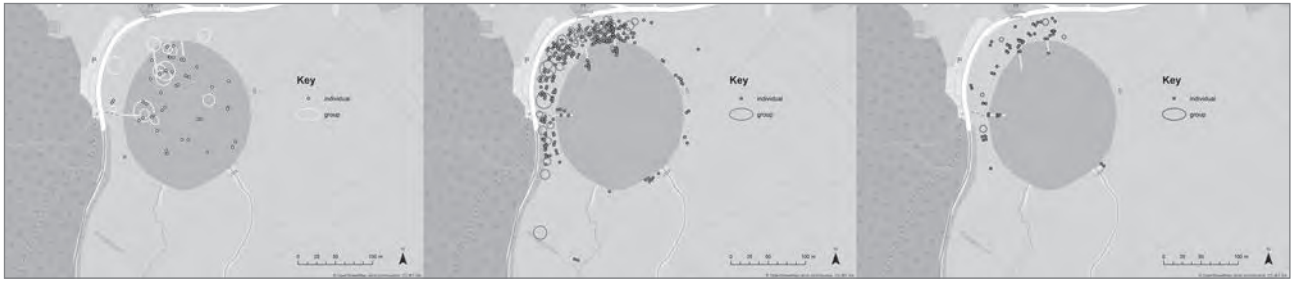


Figure 9: Examples of cumulative use of the place by type of activity during peak days (15 June 2018, 17 June 2018, and 19 August 2018; illustration: Nevenka Mihevc, source: OpenStreetMap and field data).

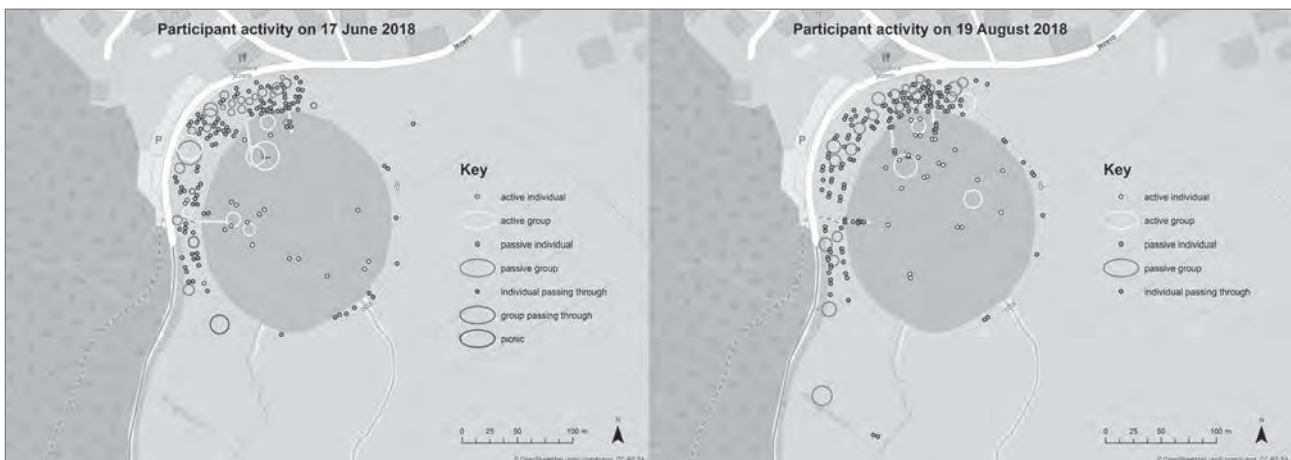


Figure 10: Single-day behavioural patterns of using the place by activity (illustration: Nevenka Mihevc, source: OpenStreetMap and field data).

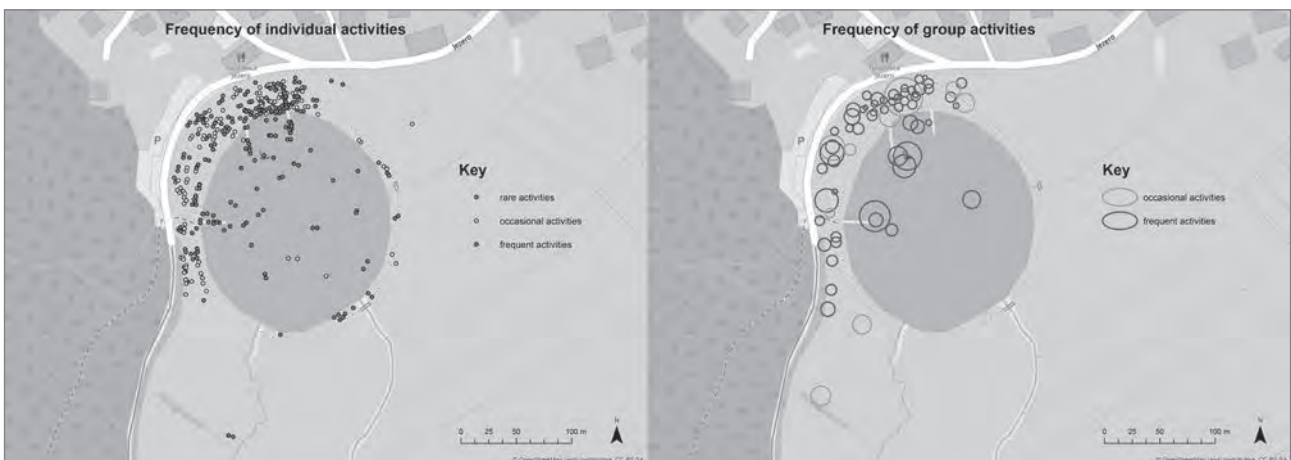


Figure 11: Frequency of users at Lake Podpeč: a) individuals, b) groups (illustration: Nevenka Mihevc, source: OpenStreetMap and field data).

that are expected because they are usually frequent), but also other less expected activities are present in the area, and that there is a need for them. Analyses can reveal which activities these are and what relation they have to the frequent activities. This is especially important when comparing the frequency of weekday and weekend activities because it turns out that occasional or rare activities are the ones that are more likely to be observed on weekdays and that they are more likely to involve local residents rather than tourists or visitors from afar.

Within this context, a detailed analysis of the days observed showed that Lake Podpeč is not necessarily a final cycling destination, but that recreational cyclists occasionally stop there and then continue on their way: cyclists were rarely spotted during the week and only occasionally on weekends. Analyses also showed that Lake Podpeč is a distinctive destination for lingering; this means that frequently observed activities are characterized by the fact that they are constantly present in the area, either as passive (e.g., sitting) or active (e.g., swimming). A separate comparison of the frequency of activities only in

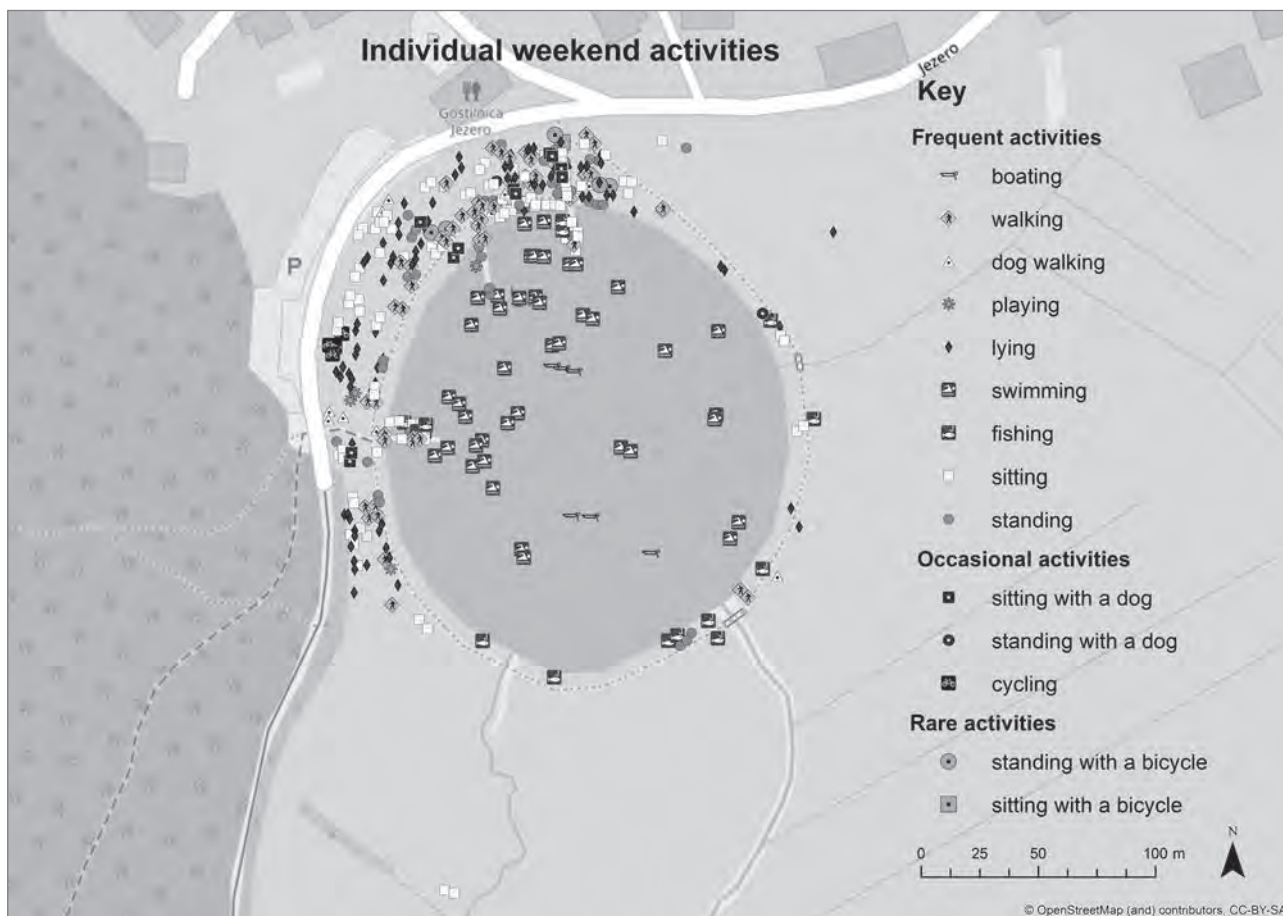


Figure 12: Type of activity by weekend frequency (illustration: Nevenka Mihevc, source: OpenStreetMap and field data).

terms of activities observed on weekends shows that the same types of activities typically occur on weekends, which is why many of them are frequent.

4 Results

This section is based on the analyses presented, and it interprets the results to make it possible to define the concept of green infrastructure from the viewpoint of cultural ecosystem services that take into account the vulnerability of a specific area or natural environment.

4.1 The area's carrying capacity for recreational use

Based on the analyses presented above, a general estimate of the recreational carrying capacity of this high-value landscape was established. The empirical results showed that, in areas of intensive use with frequent long-lasting active or passive activities, the average land area per user was at least 30 m² or, for the generalized size of the area, if users were evenly distributed, everyone would use or occupy a piece the size of a circle with at least a three-metre radius.

The data showed that on peak days there are approximately three hundred people in the Lake Podpeč area and that they stay there for at least a few hours. The area they use (AU) ranges from 3,500 m² (an area of denser use) to 8,000 m² (an area with uses dispersed on the edges). The two areas calculated differ regarding the distribution of users in the place. The larger area includes all locations used any time within the entire observation period (i.e., the most scattered pattern of cumulative use of place), whereas an area of denser use refers to an area usually occupied, excluding more distant locations that may sometimes be selected for any use; for example, sitting or fishing (see Figure 13).

$$C = \frac{AU}{NU}; C = \pi r^2,$$

where:

AU = total area used

NU = number of people in the total area used

C = generalized size of the area used per person

r = radius of the generalized size of the area used per person

$$C1 = \frac{3,500 \text{ m}^2}{300} = 12 \text{ m}^2; C1 = 12 \text{ m}^2 = \pi r^2, r = \sqrt{\frac{01}{\pi}}, r = \sqrt{3.8} \sim 1.9 \text{ m}$$

$$C2 = \frac{8,000 \text{ m}^2}{300} = 26 \text{ m}^2; C2 = 26 \text{ m}^2 = \pi r^2, r = \sqrt{\frac{02}{\pi}}, r = \sqrt{8.2} \sim 2.8 \text{ m}$$

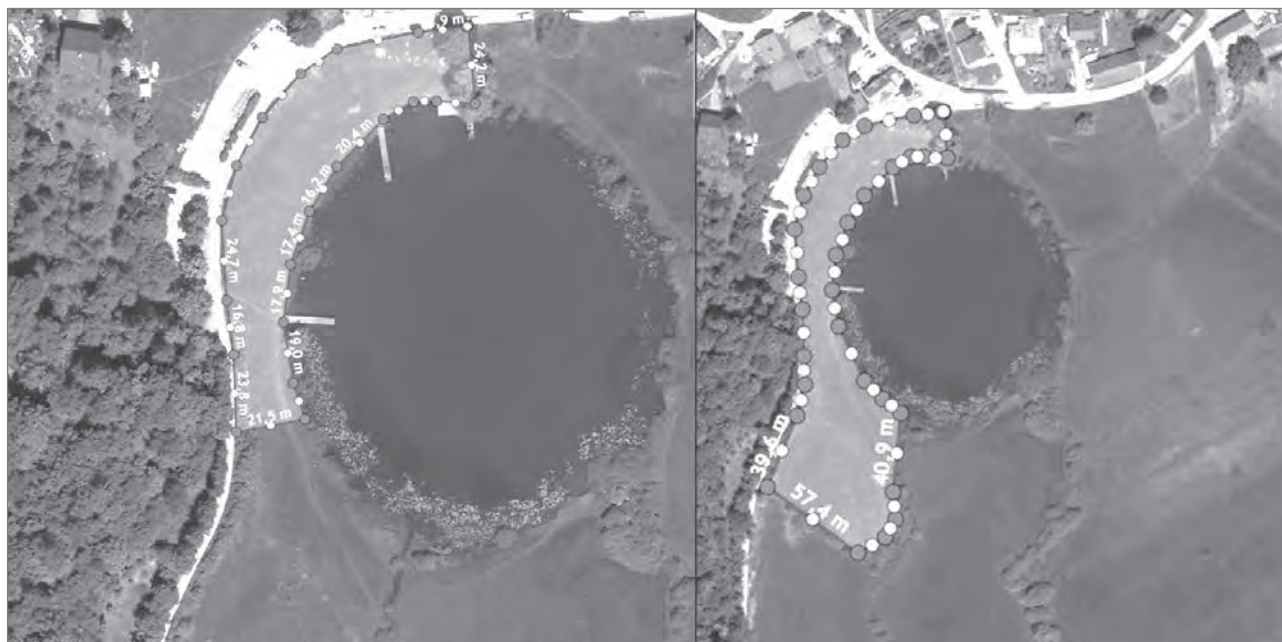


Figure 13: Two areas selected for calculating carrying capacity (illustration: Nevenka Mihevc, source: Agencija Republike Slovenije za okolje, *Atlas okolja*). Estimates showed that every person uses an area of the size of a circle (C) with a two-to-three-metre radius.

4.2 Discussion

The current level of development of the concept of an area's carrying capacity for specific use only involves rough assessments, but it is important that such topics begin to be addressed and discussed in order to develop an idea of actual uses and their impacts on the environment, and the environment's natural regeneration capacity. For illustration, in addition to the frequency of a specific activity, its intensity (i.e., how many people are involved in the same type of activity at the same time in the area observed) is vital to suitably assess the area's carrying capacity for leisure and recreational uses. Activities observed on weekends that usually involved a larger number of people included sitting, lying on the grass, and swimming. Frequent, but not very intensive activities (i.e., involving fewer people) were also fishing, watching or standing around, and walking.

Despite everything, such assessments can thus provide a good starting point for seeking answers (or posing new questions). Estimates such as those illustrated above form the basis for further thinking and designing action plans and measures for directing recreational and relaxational activities to a specific area. In addition, they can help predict the capacities for the new locations to which such uses are being directed and site the relevant activities in these locations. Moreover, they also help redistribute and direct recreational users to similar areas or contribute to the sustainable management of protected areas from the perspective of recreation and visits.

Based on these results, the extent of pressure that still ensures adequate privacy in public space can be determined (Hall, 1966).

For example, the abstract area of influence (a generalized area with a two-to-three-metre radius per person) occupied by an individual in the pilot case presented here roughly matches the anthropology of space (Hall, 1966) corresponding to "social distance – far phase", which, according to Hall (1966), ranges from 2.1 to 3.7 m.

These initial estimates provide a preliminary starting point for further research into the potential of the concept of an area's carrying capacity for specific use not only from the viewpoint of an area's social dimensions, but also nature protection and biodiversity. The results of the pilot study showed that the southern part of the lake is less attractive for sitting or lying on the grass. It is overgrown, damp, without shade, and crisscrossed by well-trodden paths, which are only some of the reasons for visitors not spending a long time there. However, it performs an important ecosystem and biodiversity function. It is thus important to highlight the fact that, in terms of the carrying capacity of the lake's wider area, it makes sense to continue to have people stay on one end, so that the southern part can perform its natural function. In terms of environmental pressure, it would be inappropriate to introduce solutions for developing the southern part and making it available for use.

5 Conclusion

Based on the established observation and behaviour mapping method, this article presents findings about the basic characteristics of spatial uses at Lake Podpeč, commenting on the features of activities' distribution across the area in terms of

various parameters: density of use and manner of filling up the area, activity type and intensity, presence by age group, and so on. It introduces the concept of an area's carrying capacity for use as a new quantity for determining pressure on the environment through use. In addition to a range of social pressures on the environment, it is also vital to identify opportunities and limitations of areas in terms of use, especially for areas recognized as high-value natural or cultural landscapes because as such they are even more attractive for use. Based on pilot studies, a draft concept was developed and the first empirical measurements were conducted. The first assessments of an area's carrying capacity based on a generalized size of the area used per person are only the beginning. The more similar observations and analyses following the proposed protocol are performed in the future, the more likely improved measures for determining the rate of an area's carrying capacity for use will be obtained. It will be necessary to study the relationship between an area's use, its physical form, and ecosystem features in as multi-layered a manner as possible.

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References

- ARSO (2019) Agencija Republike Slovenije za okolje, *Atlas okolja*. Available at: http://gis.arso.gov.si/atlasokolja/profile.aspx?id=Atlas_Okolja_AXL@Arso (accessed 13 June 2019).
- Chang, Q., Li, X., Huang, X. & Wu, J. (2011) A GIS-based green infrastructure planning for sustainable urban land use and spatial development. *Procedia Environmental Sciences*, 12(2012), 491–498. DOI: 10.1016/j.proenv.2012.01.308
- European Commission (2013) *Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital*. Available at: http://eur-lex.europa.eu/resource.html?uri=cellar:d41348f2-01d5-4abe-b817-4c73e6f1b2df.0014.03/DOC_1&format=PDF (accessed 12 Feb. 2018).
- European Commission (2016) *Supporting the implementation of green infrastructure*. Directorate-General for the Environment, ENV.B.2/SER/2014/0012. Available at: https://ec.europa.eu/environment/nature/ecosystems/docs/green_infrastructures/GI%20Final%20Report.pdf (accessed 25 Apr. 2018).
- European Commission (2018) *Mapping and assessment of ecosystems and their services: An analytical framework for mapping and assessment of ecosystem condition in EU*. Luxembourg, Publications Office of the European Union.
- Gill, S. E., Handley, J. F., Ennos, A. R. & Pauleit, S. (2007) Adapting cities for climate change: The role of green infrastructure. *Built Environment*, 33(1), 115–133. DOI: 10.2148/benv.33.1.115
- Goličnik, B. (2006) *Vedenjski zemljevidi ljubljanskih trgov in parkov: novi izzivi in pogledi na načrtovanje in urejanje prostora*. Ljubljana, Urbanistični inštitut Republike Slovenije. DOI: 10.5379/urbani-izziv-2002-13-01-011
- Goličnik, B. & Ward Thompson, C. (2002) Opazovanje in vedenjski zemljevidi: metoda raziskovanja javnega odprtega prostora v mestu. *Urbani izziv*, 13(1), pp. 82–89. DOI: 10.5379/urbani-izziv-2002-13-01-011
- Goličnik Marušić, B. (2015) Social behaviour as a basis for design and development of green infrastructure. *Urbani izziv*, 26, pp. 130–149. DOI: 10.5379/urbani-izziv-en-2015-26-supplement-009
- Goličnik Marušić, B. & Praper Gulič, S. (2018) Development of a user-centered module: A contribution to flood-sustainable spatial planning. *Urbani izziv*, 19(2), pp. 111–125. DOI: 10.5379/urbani-izziv-en-2018-29-02-004
- Hall, E. T. (1966) *The hidden dimension*. New York, Bantam Doubleday Dell Publishing Group.
- LOS_DAMA! (2019) *Green infrastructure for better living*. Available at: https://www.alpine-space.eu/projects/los_dama/en/home (accessed 30 May 2019).
- Meerow, S. & Newell, J. P. (2017) Spatial planning for multifunctional green infrastructure: Growing resilience in Detroit. *Landscape and Urban Planning*, 159, pp. 62–75. DOI: 10.1016/j.landurbplan.2016.10.005
- Openstreetmap Foundation (2019) *Openstreetmap*. Available at: <https://www.openstreetmap.org> (accessed 12 May 2018).
- Raymond, C. M., Berry, P., Breil, M., Nita, M. R., Kabisch, N., de Bel, M. (2017) *An impact evaluation framework to support planning and evaluation of nature-based solutions projects. Report prepared by the EKLIPE Expert Working Group on Nature-Based Solutions to Promote Climate Resilience in Urban Areas*. Wallingford, UK, Centre for Ecology & Hydrology.
- Taylor, L. & Hochuli, D. F. (2017) Defining greenspace: Multiple uses across multiple disciplines. *Landscape and Urban Planning*, 158, pp. 25–38. DOI: 10.1016/j.landurbplan.2016.09.024
- Tzoulas, K., Korpela, K., Venn, S., Yli-Pelkonen, V., Kaźmierczak, A., Niemela, J. & James, P. (2007) Promoting ecosystem and human health in urban areas using green infrastructure: A literature review. *Landscape and Urban Planning*, 81, pp. 167–178. DOI: 10.1016/j.landurbplan.2007.02.001
- Ward Thompson, C. (2013) Activity, exercise and the planning and design of outdoor spaces. *Journal of Environmental Psychology*, 34, pp. 79–96. DOI: 10.1016/j.jenvp.2013.01.003

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A comparative analysis of selected recommendations of the feng shui school of form, Alexander et al.'s pattern language, and findings of environmental psychology

Feng shui is a traditional Chinese art of creating a supportive living environment. Despite many research contributions on feng shui, very few verify (comparatively or experimentally) the actual effectiveness of feng shui recommendations. Even the architectural profession has never clearly defined its opinion on feng shui. This comparative analysis seeks to determine whether 118 selected feng shui school of form recommendations are consistent with the recommendations of Alexander et al.'s pattern language and with selected findings in environmental psychology. The results support this, showing that 34% of the recommendations (or forty recommendations out of 118 in total) are consistent with pattern language and that 45% (or fifty-three recommendations) are fully or partially consistent with the findings of environmental psychology. Altogether, more than half of the recom-

mendations (57%, or sixty-seven recommendations) are consistent (indirectly confirmed) by one or the other knowledge system, which means that it is very likely that these recommendations will actually have the promised impact on users of physical space. Twenty-seven feng shui recommendations (or 23% out of the 118) are doubly consistent, of which most are related to the five-animals feng shui model, the importance of the presence of water and natural light in the living environment, and the importance of the main entrance. The bulk of the recommendations, which remain unaddressed, relate to the Chinese concept of living energy, or qi.

Keywords: Feng shui, Alexander's pattern language, environmental psychology, comparative analysis

1 Introduction

Feng shui is a traditional Chinese art of environmental design that is supposed to support the user as much as possible. It is rooted in traditional Chinese philosophy and tightly embedded in the Chinese cultural and historical framework. It has been present in China and other Asian countries for millennia, but it has been known in the West only since the late nineteenth century. At the turn of the millennium, it experienced its first major peak of Western popularity, but the architectural profession never clearly defined its opinion on the phenomenon of feng shui. One reason for this is certainly the feng shui research barriers that Western researchers are particularly exposed to: the diversity of feng shui schools, methods, and techniques, a lack of knowledge of the language and cultural background, the subjectivity of interpreting recommendations, and, above all, the problem of isolating feng shui effects and, consequently, their scientific validation. Feng shui was first the subject of anthropological research in the West (e.g., De Groot, 1897; Needham, 1956; Freedman, 1968; March, 1968; Feuchtwang, 1974) as one of many traditional Chinese divination techniques that have been an important social phenomenon throughout Chinese history (Kubny, 2008). The techniques have evolved throughout history, from a privileged practice reserved for high society to a practice intended for everyday use and the common man (Bruun, 2003, 2008). At the same time, they evolved from a rather passive technique, the primary purpose of which is accident prevention, to an active practice, the primary purpose of which is to ensure happiness. Feng shui is closely linked to traditional Chinese philosophy and Chinese popular religion, representing an extensive collection of ideas, practices, rituals, and ceremonies connected with life cycles that connect the ordinary Chinese farmer with the local environment and society. At the same time, popular religion also extends beyond the concrete material world into the world of spirits, ancestors, and local gods, where feng shui is largely defined through the cult of ancestor worship and the cult of worshipping nature as a living being.

In addition to contemporary anthropological research (e.g., Hwangbo, 1999; Bruun, 2003, 2008; Paton, 2013), the most interesting areas of contemporary study of feng shui are the comparison between feng shui and sustainable construction (e.g., Yoon, 1980; Dan, 1994; Han, 2001; Xu, 2003; Chen & Nakama, 2004) and the study of traditional buildings and urban arrangements (built in accordance with feng shui recommendations; e.g., Nemeth, 1987; Xu, 1998; Kalland, 1999; Thongkamsamut & Buranakarn, 2007; Chiang, 2009; Mak, 2014; Gray, 2017). Feng shui-related contributions in contemporary architecture and urbanism are fewer than one would expect, given the active use of feng shui in the Asian

world. There are significantly more professional manuals (e.g., Bramble, 2003; Mak & So, 2009, 2011), in which architects seek to explain to fellow architects the basic principles of feng shui. At the same time, the content in research articles under various headings is very repetitive. Nonetheless, in the Asian world, feng shui is an important cultural moment whose influence can be traced through contributions in economics and real estate (e.g., Choy et al., 2007; Chang, 2009; So, 2009; Chang & Lii, 2010; Wu et al., 2012; Yau, 2012; Chen et al., 2015), tourism (e.g., Hobson, 1994; Poulston, 2009; Poulston & Bennett, 2012), and traditional and official medicine (e.g., Whedon, 2000; Schumm, 2004; Sit, 2004; An, 2014). There are very few contributions that focus on evaluating feng shui recommendations and exploring whether these recommendations actually work, or whether they are merely part of anthropological cultural heritage. Only sixteen were identified in a literature review. They can be divided into comparative studies and field experiment studies. In the comparative studies, the effectiveness of feng shui recommendations (especially those of the feng shui school of form) is not directly tested in field research, but it is compared with findings in other fields, notably environmental psychology and contemporary architectural practice. Even in experimental studies, the main focus is on exploring the effectiveness of the school of form, and only in two cases also on parts of the school of compass (Bazley et al., 2016; Charles et al., 2017). As many as half of the field studies deal with the position of the building in the wider environment (e.g., Han & Amita, 1996; Lynch, 2003; Han, 2004; Mak et al., 2005; Um, 2009), and half focus on the design of the building or its interior (e.g., So & Lu, 2001; Mak et al., 2005; Poulston & Bennett, 2012; Octavia & Gunawan, 2014; Bazley et al., 2016; Charles et al., 2017; Hong et al., 2017; Mak, 2017). Some studies seek to prove the credibility of feng shui recommendations through existing evaluation systems (see, e.g., Chang et al., 2009; Pheng et al., 2012). However, the comparative studies by Bonaiuto et al. (2010) and Xu (2004) are of particular interest for the comparative analysis performed, and in both cases the feng shui school of form is at the forefront.

In a comparative study of selected elements of environmental psychology and feng shui, Bonaiuto et al. (2010) first introduced the two disciplines in terms of their core characteristics and fields of activity. What follows is a rough comparative analysis between the two, determining that many findings of environmental psychology are embedded in feng shui design recommendations. Two properties of the physical space are analysed in detail: the restorative element and the control element. Restorative elements of the environment reduce mental fatigue and stress (e.g., a view of water or nature). Control reflects the level of power over the environment, and its lack is often associated with stress. Both elements are recognized as

very important environmental features that support wellbeing in both disciplines. The study concludes that there are points of contact between environmental psychology and feng shui. The disadvantage of the study is that, when presenting feng shui, it focuses solely on the concepts of the school of form and does not even mention the compass school. Xu (2004) analyses the theoretical foundations of feng shui and compares them to the basic human needs of behavioural psychology: survival, safety, sexuality, and development. The author notes that architects should incorporate key findings of feng shui theory in creating architectural solutions. The basis for the comparative analysis between the selected recommendations of the school of form, environmental psychology, and Alexander et al.'s pattern language, which is presented below, was made in the framework of the master's thesis *Feng shui: primerjalna študija izbranih tradicionalnih priporočil in sodobnih dognanj* (Feng Shui: A Comparative Study of Selected Traditional Recommendations and Contemporary Findings; Kryžanowski, 2012) at the University of Ljubljana's Faculty of Architecture. Based on the results, the following research question should be answered: "Are the selected recommendations of the feng shui school of form consistent with the findings of the selected chapters of environmental psychology and pattern language in the sense that their spatial (or design) or psychological impact on the user is the same?"

2 Methods

A comparative analysis is performed using the descriptive scientific method (Kališnik & Lah, 1998), in which the researchers do not influence the phenomena or information studied, but only analyse this. First, a database of feng shui recommendations was created, and afterward two separate comparisons were made: first, between the feng shui database and Alexander et al.'s pattern language, and then with the findings of environmental psychology.

2.1 Creation of the feng shui school of form recommendations database

The feng shui school of form was taken as the starting point for the creation of the feng shui recommendations database. There are two major schools of feng shui: the school of form and the compass school. The school of form is more intuitive, and the compass school is more mathematical. The basic starting point of the school of form is the presence of the life force qi in the landscape and the corresponding ideal positioning of new buildings or cities. It is very important to take into account the five-animals model (also known as four emblems) or the five feng shui geographical secrets (e.g., Mak, 2014). In contemporary Western interpretations of feng shui,

the focus of the school of form recommendations has shifted from the placement of the building in the landscape to the recommendations regarding interior design, but the basic logic remains the same. The compass school is more repetitive and mathematically modelled than the school of form. As the name implies, the main instrument used by the compass school is the compass. The Chinese already knew in the first century AD that the magnetic field has an effect on living beings (Kubny, 2008: 251). Further logical reasoning was that the magnetic field also affects humans. The magnet's needle, following the principle of "equal attracts equal", is supposed to be capable of showing the flow of Earth's qi because it was magnetized directly with Earth's qi. The feng shui compass school developed different techniques for calculating what the quality of qi should be in specific areas of physical space relative to the compass directions based on the magnetism of the Earth (the impact of the Earth) and at specific time intervals based on the influence of celestial bodies (the impact of the sky).

From the above outline of the two schools and an in-depth analysis of their recommendations, it is clear that only the school of form could be chosen for comparative analysis with contemporary findings. Its recommendations are similar in structure (but not necessarily in content) to those of environmental psychology and pattern language. All three systems describe spatial situations and evaluate whether people feel comfortable or less comfortable when faced with them. On the other hand, it is not clear what could be used for a comparison of the recommendations of the compass school. In contemporary architecture and urbanism (or other fields of science), there is no system that works in the same or at least roughly the same way – in the sense that the degree of comfort in a room or spatial arrangement would be judged primarily according to the compass orientation, the year of the completion of the building, or the user's birthday. The compass school could be scientifically evaluated only by using the experimental method.

The first step, therefore, was to create a database of feng shui school of form recommendations (2011) based on the study of relevant feng shui manuals, information received through education (training for a feng shui consultant), and the author's own (then fifteen years') practical experience in feng shui consulting. Neither then nor today was there a consensus among feng shui researchers on which of the many methods and techniques actually belong to traditional feng shui. One cannot say that there is a unified database of traditional feng shui knowledge because over history many variations of individual techniques developed, which are not always harmonized. An additional problem is that the recommendations form part of traditional knowledge and are stated in the texts without any specific scientific justification regarding their effectiveness.

Therefore, the creation of the database of the school of form recommendations is based on an in-depth study of the literature, on the works of authors that identify themselves as teachers of traditional feng shui (as opposed to the new age commercial feng shui of “life stations”), and whose recommendations are the same or at least very similar. Selected authors include Joseph Yu (Moran et al., 2005), Ewa Wong (1996, 2001), Derek Walters (Volters, 1998), and Evelin Lip (1979, 1986, 1994). The recommendations of Jes Tyng-Yee Lim (1997, 2000) are also partially incorporated, but without the recommendations for commercial feng shui techniques. The database excludes all recommendations related solely to the Chinese cultural and historical framework (e.g., the use of Chinese symbols, decorations, or mirrors), recommendations that do not have a direct design impact, and recommendations that cannot be linked to the philosophical background in which feng shui is grounded. The selected authors have only a few or no such recommendations. For the purpose of constructing the feng shui database, the recommendations are first summarized in the form of a text (manual) and divided into several chapters (e.g., the concept of qi in a landscape; the five-animals model; and recommendations for the bedroom, kitchen, office space, and so on). For the sake of the comparative analysis, the recommendations of the school of form are next summarized in a database of 118 simple claims and divided into two sections: the landscape with the building’s surroundings and the building itself with interior design (part of the recommendations are presented in Tables 1 and 2).

2.2 Creation of Alexander et al.’s pattern language database

In the second step, recommendations from pattern language were analysed (Alexander et al., 1977). Alexander et al. claim that certain spatial situations support life, whereas others do not. With each of the patterns, they identify one of the problems in the environment and propose an appropriate solution. The patterns move from the level of the region, through the level of the settlement, to the level of the surrounding area of the building, the building itself, the individual rooms in the building, and at the end the construction details. Each pattern has a comprehensive description of the problem and possible comparisons with findings in other fields of science. Each pattern ends with instructions on how to design the physical space to eliminate the problem identified in the introduction. All 253 patterns work together as a whole (one organism), which is a crucial point for Alexander et al. Some patterns are very similar and appear only on different scales (e.g., a square, yard, or living room).

For the purposes of the comparative analyses, all patterns identified by Alexander et al. and all feng shui recommendations

were compared. The comparison was based on a list of 118 feng shui school of form recommendations. The basic starting point of the comparison was whether the recommendations have the same or a very similar effect: in terms of urban design (e.g., desirable presence of natural landscape near or in close proximity to buildings), in terms of the design of individual elements of a building (e.g., windows in all rooms of the structure), or in terms of the psychological effect on the user (e.g., proximity to water has a positive effect on human wellbeing). If the effect was identified as being the same or similar, in a way that it could be described through one statement compliant with the basic message of both recommendations, it was marked *Yes*. In doing so, the level of compliance described by *Yes* was classified into three levels. If the recommendations were the same in the sense that they used the same words for the same concepts (e.g., main entrance) and were describing the same number of parameters (e.g., clearly visible or illuminated), the mark *Yes* was used. If the essence of the two recommendations was the same but the vocabulary used was different, it was marked (*Yes*). The same marking (*Yes*) was also applied when the recommendations used the same vocabulary, but one recommendation included several parameters and the other recommendation included only some of these parameters. If the vocabulary used was different and the consistency of the meaning can be ascertained only through logical derivation using induction or deduction and, at the same time, one recommendation may include several parameters and the other one only part of them, the mark ((*Yes*)) was used. In short, *Yes* indicates a high degree of compliance, (*Yes*) partial compliance, and ((*Yes*)) indirect compliance. If none of Alexander et al.’s patterns could be identified for the school of form recommendation, a pattern that is comparable either in effect or in essence, the field denoting the degree of compliance remained blank. In some cases, the pattern from pattern language has a directly opposite recommendation from the school of form. There were not many of these cases, but they are marked *No* in Table 1. Table 1 shows all four levels of compliance described above, together with a substantive essence statement that is common to both recommendations.

2.3 Creation of the database according to environmental psychology recommendations

For the purpose of comparative analysis, the findings of environmental psychology have been summarized according to content; for example, recommendations for home design, the work environment, retail, and so on. Two works have been taken as a basis. *Place Advantage* (Augustin, 2009) offers current research findings in environmental psychology, and *Environmental Psychology* (Bell et al., 2001) on its general character-

Table 1: Examples of the school of form recommendations and their comparison with Alexander et al.'s pattern language.

School of form recommendation	Recommendation or part of it from Alexander et al.'s pattern language	Substantive essence	Compliance
3. The location of the building or spatial arrangement is favourable when it takes into account (the five-animals model): protected back, partially protected left and right sides of the building, or spatial arrangement and open space in front (without objects) with a view.	96. (part) The height of the building should not differ significantly from the neighbouring buildings.	The space should be designed in such a way that it gives a feeling of at least partial protection and the possibility of looking at (controlling) the larger open space.	Yes
	106. (part) All open spaces should be designed in a way to have at least a partial sense of protection.		
	114. In an open space, people always look for a place where they have a protected back and a view of the larger open space.		
	115. (part) The inner courtyard should have a view of the larger open space.		
	124. (part) Life in the public square is shaped along the edges, which allows for protection and lingering.		
	125. (part) In an open space with an activity, the most interesting areas for lingering are those that are slightly elevated and allow for both control of the surroundings and involvement in activities.		
	126. (part) Somewhere in the middle of a large open public space, there should be a tree, fountain, or other feature where people can protect their backs.		
	183. In a good working space, a wall should be at least behind the back and on one side, while the front should open into a larger area.		
	185. (part) The seating area should be protected, without crossing paths, and in an approximately semi-circular shape.		
	193. Every space should have a balance between openness (flowing space) and closedness (cell space).		
38. Through the windows and doors, the vital energy qi enters the object.	107. People are more positive in buildings with windows than in buildings without windows. Light plays a key role in maintaining circadian body rhythms.	The presence of windows in the room has a positive effect on living conditions.	(Yes)
	128. The main living quarters should face south. Sunshine in the living room is of utmost importance for living quality.		
	192. Rooms without a view (without windows) adversely affect living quality.		
62. Narrow corridors with blind ends are uncomfortable.	132. The corridors should be short, spacious, and preferably illuminated.	The corridors should be wide enough.	((Yes))
	132. The corridors should be spacious so that furniture can also be fitted, creating a sense of living.		
2. Place the building in an ideal location with respect to the flow of life energy qi in the landscape.	104. Buildings must be placed in the worst locations in the landscape, not the best.		No
14. A road or river should always be in the front of the building, not in the back, because the dynamic energy flow weakens the back.			

Note: Yes = high compliance; (Yes) = partial compliance; ((Yes)) = indirect compliance; No = reverse effect of recommendation; blank = no compliance. Source: author.

Table 2: Examples of the school of form recommendations and their comparison with environmental psychology findings.

School of form recommendation	Recommendation or part of it from environmental psychology	Substantive essence	Compliance
106. The ideal workplace has a protected back, space control, the ability to look through the window, and the possibility of viewing the door.	<p>In the workplace (when working) people want to have a protected back (Augustin, 2009: 198), while also controlling the access to the room (Augustin, 2009: 29).</p> <p>People want to have something solid (a wall or partition) behind their back while sitting (Augustin, 2009: 72).</p> <p>Due to "prehistoric memory", we like to sit with a protected back facing open space (Augustin, 2009: 10, 85).</p> <p>We like to sit in rooms that give a sense of shelter with lower ceilings and a view of the larger open space (Hildebrandt, 1999, cited in Augustin, 2009: 11).</p> <p>Children and adults are more relaxed and learn more easily when they are in a room that is protected and has preferably a slightly lower ceiling (Augustin, 2009: 228).</p> <p>We love rooms that allow us to control access (Augustin, 2009: 29).</p>	The best seating areas are places with a protected back, with the possibility of looking at a larger open space, and with access control.	Yes
1. From natural landscapes, the life energy qi enters the building	<p>The presence and possibility of a view of the natural landscape next to the building has a positive impact on living quality. It promotes psychological and physical health (Augustin, 2009: 234).</p> <p>It allows for:</p> <ul style="list-style-type: none"> – A restorative effect (Kaplan, 1995, cited in Augustin, 2009: 31); – The reduction of mental exhaustion and stress in lecture rooms (Augustin, 2009: 223); – Mental refreshment in shopping malls (Augustin, 2009: 219); – More satisfaction with a job (Edwards, 2008, cited in Augustin 2009: 186); – A positive impact on home and job wellbeing (Kaplan, 1993, 2001, cited in Augustin, 2009: 186); – Reduced stress and a re-established higher level of mental energy in hospital environments (Ulrich, 1984 and Ulrich et al., 1991, cited in Augustin, 2009: 231); – Generally improved wellbeing and effectiveness when in the presence of plants (Augustin, 2009: 34). 	The proximity of natural green areas (or the possibility of a view of green areas) has a beneficial effect on wellbeing in buildings.	(Yes)
28. A building near hospitals, cemeteries, slaughterhouses, and other places related to disease, torture, or death is unfavourable.	People are attracted to places that promise comfort, safety, and a sense of appreciation (Augustin, 2009: 14).	People are not attracted to places associated with illness, torture, or death.	((Yes))
25. When on a slope, the entrance to the building should be on the lower side.			

Note: Yes = high compliance; (Yes) = partial compliance; ((Yes)) = indirect compliance; blank = no compliance. Source: author.

istics. Based on the same methodology used in comparative analyses with Alexander et al.'s pattern language, each of the 118 feng shui recommendations were attributed a degree of compliance: *Yes* high, (*Yes*) partial, ((*Yes*)) indirect, or blank,

which means there was no consistency between the recommendations of the feng shui school of form and the findings of environmental psychology. Table 2 shows all four of these levels of compliance together with the substantive essence statement common to both recommendations.

3 Results and discussion

3.1 Comparison of selected feng shui recommendations and Alexander et al.'s pattern language

Analysis of the comparison between 118 of the feng shui school of form recommendations and Alexander et al.'s pattern language shows that for twenty-one feng shui recommendations it is possible to find a pattern demonstrating high compliance with the feng shui recommendation (marked *Yes*), fourteen feng shui recommendations are partially compliant with Alexander et al.'s pattern language (marked (*Yes*)), and five recommendations are linked via indirect compliance (marked ((*Yes*))). Altogether, at least a minimum level of compliance can be detected in forty recommendations, representing 34% of all feng shui recommendations. In this, recommendations with contrary effect, although dealing with the same or similar content, are not taken into account (e.g., see Recommendation 2 in Table 1). Taken together, such recommendations number five (4% of all recommendations). Two of them are conditionally inconsistent with pattern 116, which speaks of the need for cascading roofs. Namely, feng shui has reservations against sharp edges of roofs that can point into living quarters, and the number of these, in the case of a highly structured roof with several levels, is higher. In the structure of the levels of compliance, it stands out that the most recommendations are linked through a high degree of compliance, where the same vocabulary is used in addition to the same spatial impact. The second highest is the share of indirect compliance with the same substantive essence and spatial effects, but different vocabulary. This was expected. The feng shui recommendations as well as Alexander et al.'s patterns cover spatial situations in the urban environment or in buildings and therefore use the same terminology (e.g., both discuss the importance of the presence of water in the open spaces or the importance of a well-designed main entrance).

Looking more precisely at the feng shui recommendations that are indirectly, partially, or very compliant, it turns out (see Table 3) that they are by far most associated with the five-animals model (twelve recommendations, or 30%), followed by the importance of natural lighting and the presence of windows (four recommendations, or 10%) and finally the importance of water and the main entrance (each has three recommendations, or 7.5%). Five per cent of the samples (or two patterns per recommendation) are linked to green areas, roads and crossings, sharp edges and corners, and the importance of the bed. All remaining patterns can be associated with only one feng shui recommendation, which represents an individual residual of 2.5%.

I also wondered what portion of all 253 of Alexander et al.'s patterns is covered by the selected 118 feng shui school of form recommendations. Forty feng shui recommendations, which are compliant in various degrees, represent 16% (of a total of 253) of all patterns. An additional five recommendations (2%) are compliant with Alexander et al.'s patterns, but the effect of these is exactly reversed. Depending on the total number of patterns, the overlap rate is low. One of the reasons for this is that Alexander et al.'s patterns have an exceptionally wide spectrum that goes from the level of the region (40% of patterns), through the level of the building (40%), to the construction level (20%). In the case of selected feng shui recommendations, most (77%) deal with the building and its interior design, and only 33% are left for the region, construction, and building details. In terms of the research question examined, based on the first part of the comparative analysis, among 118 feng shui school of form recommendations, forty (34%) are indirectly, partially, or highly compliant with the recommendations of Alexander et al.'s pattern language.

3.2 Comparison of selected feng shui recommendations and the findings of environmental psychology

Analysis of the comparison between 118 feng shui school of form recommendations and the findings of environmental psychology reveals that twelve feng shui recommendations are highly compliant with environmental psychology findings (marked *Yes*), eighteen of the feng shui recommendations are partially compliant with environmental psychology (marked (*Yes*)), and as many as twenty-three recommendations are indirectly compliant (marked ((*Yes*))). Taken together, at least a minimum level of compliance can be defined for fifty-three recommendations, accounting for 45% of all 118 feng shui recommendations. In contrast to Alexander et al.'s pattern language, the highest share of compliance is that of indirect and partial compliance. This can be explained by the fact that, contrary to pattern language, the findings of environmental psychology (in the sources considered) are presented primarily through general rules explaining people's responses to selected spatial elements or arrangements. Through examples, responses to particular situations are also explained, but in less detail than in Alexander et al.'s pattern language or feng shui.

A detailed analysis of all compliant, partially compliant, and indirectly compliant feng shui recommendations (see Table 4) shows that 32% are related to the need for shelter and control, or to the five-animals model, as referred to in the school of form. Many recommendations are associated with non-verbal communication of physical space or with psychological attraction of spatial arrangements (24%). Most of these recommen-

Table 3: Comparison of individual feng shui themes and Alexander et al.'s patterns.

Themes of feng shui recommendations	Sequence number of patterns	Share as % of 40*
Five-animals scheme	90, 96, 105, 106, 114, 115, 124, 125, 126, 183, 185, 193	30
Natural lighting, the meaning of the window	107, 128, 192, 194	10
The importance of water	25, 64, 71	7.5
Main entrance and front lobby	110, 112, 130	7.5
Green areas and natural landscapes	3, 60	5
Roads and crossings	49, 50	5
Sharp corners and edges	116, 191	5
Bed	187, 188	5
Correct shapes, order, symmetry	99	2.5
Ideal location	104	2.5
Garage	113	2.5
Roof	117	2.5
Empty centre	129	2.5
Corridors	132	2.5
Stairs	133	2.5
Bathroom	144	2.5
Workplace	183	2.5
Kitchen	184	2.5

Note: *The share for the individual feng shui theme is based on the number of Alexander et al.'s patterns that overlap with this theme. Source: Kryżanowski (2012: 175).

Table 4: Comparison of environmental psychology themes and the share of the feng shui recommendations linked to these themes.

Environmental psychology themes	Link to feng shui recommendations	Share as % of 53
The need for shelter (safety) and control (view of a larger open space), control of access to the room, and the impact of prehistoric memory on responses to physical space	3, 41, 42, 65, 78, 83, 86, 91, 94, 106, 107, 108, 109, 110, 111, 113, 114	32
Psychological attraction/non-attraction of arrangements (nonverbal communication and first impression)	28, 30, 31, 36, 40, 44, 45, 67, 68, 77, 92, 102, 105	24
Impact of form, patterns (sharp, aggressive, correct, symmetry, stability), and colour	26, 27, 35, 37, 46, 63, 71, 72, 73, 74	19
Presence of natural light (presence and position of the window, glare)	32, 38, 95, 98, 112	9.5
Presence of water elements	15, 17, 34, 43, 99	9.5
View of nature (especially restorative effect)	1, 11	4
Impact of wind	5	2

Source: author.

dations show indirect compliance (nine out of thirteen). Next are the influences of form, patterns, and colours (19%), where the negative impact of sharp and aggressive forms, emphasized in feng shui, is predominant. This is also confirmed by the findings of environmental psychology, but it is not specifically stressed. The remaining feng shui recommendations are linked to the impact of natural elements (light, water, nature, and wind) and together comprise the remaining quarter of all recommendations. A more detailed overview of the shares associated with the environmental psychology themes is provided in Table 4.

In terms of the research question, the comparative analysis of the feng shui school of form and environmental psychology showed that, out of 118 feng shui school of form recommendations, fifty-three (45%) are indirectly, partially, or highly compliant with the findings of environmental psychology.

This means that, based on the findings of environmental psychology, one could conclude that a good 45% of the feng shui school of form recommendations presented in this article have actual positive effects on wellbeing in the physical space. To analyse the effectiveness of the remaining 55%, the same

strictly controlled studies should be carried out as outlined in the research protocols of environmental psychology. It would also be interesting to examine what portion of the findings of environmental psychology as a whole is actually covered by the selected feng shui recommendations. The influential area of environmental psychology is significantly broader than the segment focusing on wellbeing, and the method used is not appropriate for this purpose. In any case, it can be concluded that the school of form as a whole covers only a small fraction of the area otherwise studied by environmental psychology, even though the school of form recommendations can be applied from the level of urbanism down to the level of interior design.

4 Conclusion

Based on the results of the comparative analyses, the answer to the research question is affirmative in both cases. The combined comparison of the compliant recommendations (of all three types) according to one or the other of the two analyses further shows that Alexander et al.'s patterns and the findings of environmental psychology do not cover the same feng shui recommendations. As a whole, sixty-seven feng shui recommendations are compliant, which is just over half (57%) of all 118 feng shui recommendations. Of these, twenty-seven recommendations have double compliance (or 40% out of sixty-seven), taking into account all three levels of compliance. This means that all three systems (feng shui, pattern language, and environmental psychology) result in the same findings or spatial recommendations. The remaining forty recommendations (or 60% out of sixty-seven) are single-compliant, which means that these feng shui recommendations are either compliant with pattern language or with the findings of environmental psychology. For just over half of the selected 118 feng shui recommendations, it can therefore indirectly be concluded that there is a high likelihood that these recommendations actually have the impact on the users that they promise.

Of the double-compliant feng shui recommendations, just under half (twelve) can be linked to the feng shui five-animals model. Apparently, this traditional Chinese model has managed to identify one of the driving factors for human wellbeing in physical space. The five-animals model can also be connected to the ideal state of things in the sky because the model basically comes from cosmology (Field, 2006) and symbolizes the constellations in the sky. In feng shui the abstract astrological diagram is transformed into a practical spatial model useful in urbanism and architecture as well as in interior design. As for the natural elements, the presence of natural landscapes, natural light, and water is very important for wellbeing. According to feng shui, water is supposed to accumulate qi. It is important

for human wellbeing in physical space, and it is also highlighted in the recommendations of environmental psychology and Alexander et al.'s theory. In terms of architectural elements, the building's main entrance is definitely an important issue. It represents the point of transition between the outside and the inside, and as a rule it is the main point of orientation on the façade and the first thing people come into direct contact with when facing the building. Its significance for the subjective experience of the building is therefore highlighted in all three strands of knowledge. It can be summarized that, when talking about compliant feng shui recommendations, this is first and foremost a discussion about the basic rules of design and of behaviour in physical space, conditioned by basic psychological reactions to spatial arrangements, which are (and were repeatedly) discovered by all cultures and traditions, and are introduced into urban and architectural design in accordance with the current state of the art and needs.

Feng shui recommendations that remain unreferenced can be classified into two categories. The first refers to the living energy qi and its behaviour in physical space, and the second is a conglomerate of various recommendations that cannot be unified under a single label. The concept of the life force qi, as expected, is not a topic that one or the other set of contemporary knowledge would consider, and so compliance was not even expected. It is important to emphasize the need for more intensive research into the effectiveness of feng shui recommendations and for the development of models that allow for an objective evaluation of both the school of form and the compass school (e.g., Kryžanowski, in press). From this kind of scientific exploration of feng shui, both modern science and feng shui can only benefit. In this way, this fascinating traditional system of knowledge can be refined and begin to move from the field of pseudoscience into the field of science. At the same time, verified feng shui recommendations can be integrated into the concepts of modern design practice in a controlled manner. After all, comparative analysis shows that a good half of the feng shui recommendations under consideration either claim or recommend the same thing as environmental psychology or Alexander et al.'s pattern language. If models were developed to effectively validate the part of feng shui that addresses concepts that modern design practices know nothing about, it would be possible to replace the mere search for similarities between the two with constructive complementation.

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References

- Alexander, C., Ishikawa, S., Silverstein, M., Jacobson, M., Fiksdahl-King, I. & Angel, S. (1977) *A pattern language*. New York, Oxford University Press.
- An, S. (2014) A case study on hospital interior colour design reflecting feng shui. *Journal of the Korean Society of Colloid Science*, 28(3), pp. 81–92 (in Korean).
- Augustin, S. (2009) *Place advantage*. Hoboken, NJ, Wiley&Sons.
- Bazley, C., Vink, P., Montgomery, J. & Hedge, A. (2016) Interior effects on comfort in healthcare waiting areas, *Work*, 54(4), pp. 791–806.
- Bell, A. B., Green, T. C., Fisher, J. D. & Baum, A. (2001) *Environmental psychology*. Mahwah, NJ, Lawrence Erlbaum Associates.
- Bonaiuto, M., Bilotta, E. & Stolfa, A. (2010) Feng shui and environmental psychology: A critical comparison. *Journal of Architectural and Planning Research*, 27(1), pp. 23–34.
- Bramble, C. (2003) *Architect's guide to feng shui*. Oxford, Architectural Press.
- Bruun, O. (2003) *Feng shui in China: Geomantic divination between state orthodoxy and popular religion*. Honolulu, University of Hawaii Press.
- Bruun, O. (2008) *An introduction to feng shui*. Cambridge, Cambridge University Press.
- Chang, W. L. (2009) Using feng shui to create a positive corporate reputation. *Corporate Reputation Review*, 12(1), pp. 43–51.
- Chang, W. L. & Lii, P. (2010) Feng shui and its role in corporate image and reputation: A review from business and cultural perspectives. *Journal of Architecture and Planning Research*, 27(1), pp. 1–13.
- Chang, P. T., Lee, J. H., Hung, K. C., Tsai, J. T. & Perng, C. (2009) Applying fuzzy weighted average approach to evaluate office layouts with feng shui consideration. *Mathematical and Computer Modelling*, 50, pp. 1514–1537.
- Charles, R., Glover, S., Bauchmueller, K. & Wood, D. (2017) Feng shui and emotional response in the critical care environment (FARCE) study. *Anaesthesia*, 72, pp. 1528–1531.
- Chen, B. X. & Nakama, Y. (2004) A summary of research history on Chinese feng-shui and application of feng-shui principles to environmental issues. Available at: http://ffpsc.agr.kyushu-u.ac.jp/jfs-q/kyushu_forest_research/57/57p013.PDF (accessed 25 Nov. 2019).
- Chen, K. H., Chang, W. L., Chih, I. L. & Liao, C. N. (2015) Framing the decision making model of the Chinese business with feng shui concept. *Human Systems Management*, 34, pp. 225–232.
- Chiang, M. (2009) Feng shui design and planning of Ming and Qing city of Beijing. In: Mak, M. Y. & So, A. T. (eds.) *Research in scientific feng shui and the built environment*, pp. 137–150. Hong Kong, City University of Hong Kong Press.
- Choy, L. H. T., Mak, S. W. K. & Ho, W. K. O. (2007) Modeling Hong Kong real estate prices. *Journal of Housing and the Built Environment*, 22(4), pp. 359–368.
- Dan, H. (1994) A human-ecology approach to environmental design: An integrative human ecology design derived from Chinese agricultural culture experiences. *Journal of Environmental Sciences*, 6, pp. 478–486.
- De Groot, J. J. M. (1897) *The religious system of China*. Leiden: Brill.
- Feuchtwang, S. (1974) *An anthropological analyses of Chinese geomancy*. Bangkok, White Lotus.
- Field, S. L. (2006) An overview of ancient fengshui. Available at: <http://www.fengshuigate.com/overview.html> (accessed 5 Sept. 2006)
- Freedman, M. (1968) Geomancy. *Proceedings of the Royal Anthropological Institute of Great Britain and Ireland*, 1968, pp. 5–15.
- Gray, J. (2017) *Domestic mandala: Architecture of lifeworlds in Nepal*. London, Routledge.
- Han, K. T. (2001) Traditional Chinese site selection – feng shui: An evolutionary/ecological perspective. *Journal of Cultural Geography*, 19(1), pp. 75–96.
- Han, K. T. (2004) A preliminary study of Luan Tou feng shui landscapes and psychological reactions. *Journal of Psychology in Chinese Societies*, 5(2), pp. 265–289.
- Han, K. T. & Amita, S. (1996) An empirical study of feng shui in landscape. *Environments*, 23(3), pp. 36–49.
- Hobson, J. S. P. (1994) Feng shui: Its impacts on the Asian hospitality industry. *International Journal of Contemporary Hospitality Management*, 6(6), pp. 21–26.
- Hong, W. T., Abdul-Rahman, H. & Wang, C. (2017) Are feng shui bedroom rules practical from the architectural perspective? In: Mak, M., Paton, M. & Rowe, T. (eds.) *Proceedings of the Academic Journal of Feng Shui. 1st Symposium – Oceania*. Sydney: Oceania University of Technology.
- Hwangbo, A. B. (1999) A new millennium and feng shui. *The Journal of Architecture*, 4, pp. 191–198.
- Kalland, A. (1999) Houses, people and good fortune: Geomancy and vernacular architecture in Japan. *Worldviews: Global Religions, Culture and Ecology*, 3(1), pp. 33–50.
- Kališnik, M. & Lah, L. (1998) *Uvod v znanstvenoraziskovalno metodologijo*. Ljubljana, Univerza v Ljubljani, Fakulteta za arhitekturo.
- Kryžanowski, Š. (2012) *Feng shui: primerjalna študija izbranih tradicionalnih priporočil in sodobnih dognanj*. Master's thesis. Ljubljana, Univerza v Ljubljani, Fakulteta za arhitekturo.
- Kryžanowski, Š. (in press) *Feng shui in apercpcija prostora: pregled znanstvenih prispevkov in terenska analiza učinkovitosti priporočil*. Dissertation. Ljubljana, Alma Mater Europaea, Institutum Studiorum Humanitatis – Fakulteta za podiplomski humanistični študij.
- Kubny, M. (2008) *Feng Shui, die Struktur der Welt*. Klein Jasedow: Drachen Verlag.
- Lim, J. T. Y. (1997) *Feng Shui und Gesundheit*. Sulzberg, Joy Verlag.
- Lim, J. T. Y. (2000) *Feng Shui für Büro und Business*. Munich, Integral.
- Lip, E. (1979) *Chinese geomancy*. Singapore, Times Books International.
- Lip, E. (1986) *Feng shui for the home*. Singapore, Heian International.
- Lip, E. (1994) *Feng shui for business*. Singapore, Times Books International.
- Lynch, E. S. (2003) *Feng shui as a site design tool: Assessing conditions of human comfort in urban places*. Master's thesis. University of Arizona, Architecture and Landscape Architecture.

- Mak, M. Y. (2014) Feng shui villages in Hong Kong: A case study of Tai Fu Tai Mansion. In: Proceedings of 4th international conference on scientific feng shui and built environment 2009 (Hong Kong 20–21 February, 2009), pp. 78–93. Hong Kong: Asian Institute of Intelligent Buildings / Department of Building & Construction, City University of Hong Kong.
- Mak, M. Y. (2017) An empirical study of modern sustainable office buildings in Sydney from the feng shui perspective. In: Mak, M., Paton, M. & Rowe, T. (eds.) *Proceedings of the Academic Journal of Feng Shui. 1st Symposium – Oceania*. Sydney: Oceania University of Technology.
- Mak, M. Y., Ng, S. T. & Chen, S. E. (2005) Formulating a hierarchical structure of feng shui knowledge. In: Ribeiro, F., Love, P. D. E., Davidson, C. H., Egbu, S. O. & Dimitrijevic, B. (eds.) *Proceedings of the CIB W102 – 2005, international conference on information and knowledge management in a global economy: Challenges and opportunities for construction organizations, 19–20 May, Lisbon, Portugal*, pp. 395–404. Salford, UK, CIB-W102.
- Mak, M. Y. & So, A. T. (eds.) (2009) *Research in scientific feng shui and the built environment*. Hong Kong, City University of Hong Kong Press.
- Mak, M. Y. & So, A. T. (2011) *Scientific feng shui for the built environment*. Hong Kong, City University of Hong Kong Press.
- March, A. L. (1968) An appreciation of Chinese geomancy. *The Journal of Asian Studies*, 27(2), pp. 253–267.
- Moran, E., Yu, J. & Biktashev, V. (2005) *The complete idiot's guide to feng shui*. New York, Alpha Books.
- Needham, J. (1956) *Science and civilisation in China. Vol. 2: History of scientific thought*. Cambridge, Cambridge University Press.
- Nemeth, D. J. (1987) *The architecture of ideology: Neo Confucian imprinting on Cheju Island, Korea*. Berkeley, University of California Press.
- Octavia, L. & Gunawan, T. (2014) Feng shui in modern house design: Searching for the rationale and possible impacts assessment. *Journal of Architecture and Built Environment*, 41(1), pp. 43–50.
- Paton, M. (2013) *Five classics of feng shui, Chinese spiritual geography in historical and environmental perspective*. Leiden, Brill.
- Pheng, L. S., Xiaopeng, D. & Ting, Q. L. (2012) Assimilating total building performance mandates with Chinese geomancy principles and scenarios. *Facilities*, 30(13/14), pp. 558–589.
- Poulston, J. (2009) Taking feng shui seriously. Available at: <https://openrepository.aut.ac.nz/bitstream/handle/10292/1628/poulston%20paper2%20-%20feng%20shui.pdf?sequence=2&isAllowed=y> (accessed 12 Apr. 2018).
- Poulston, J. & Bennett, R. (2012) Feng shui, fact and fiction: An exploratory study. Available at: https://www.researchgate.net/profile/Jill_Poulston/publication/235260228_Fact_fiction_and_feng_shui_An_exploratory_study/links/5669e80308ae62b05f027175/Fact-fiction-and-feng-shui-An-exploratory-study.pdf (accessed 12 Apr. 2018).
- Schumm, C. (2004) *Feng Shui im Krankenhaus: Architektur und Heilung*. Vienna, Springer Verlag.
- Sit, W. (2004) *Feng shui elements and life areas approach for older persons in a nursing care facility*. Dissertation. Denton, Texas Woman's University.
- So, C. H. (2009) *An examination of the effect of feng shui on residential property price in Hong Kong*. Bachelor's thesis. Hong Kong, The University of Hong Kong, Department of Real Estate and Construction.
- So, A. T. P. & Lu, J. W. Z. (2001) Natural ventilation design by computational fluid dynamics – A feng-shui approach. *Architectural Science Review*, 44(1), pp. 61–69.
- Thongkamsamut, C. & Buranakarn, V. (2007) Form follows feng shui. *Journal of Environmental Design and Planning Nakhara*, 2, pp. 37–54.
- Um, J. S. (2009) Exploring spatially prioritized parameters of feng-shui from tomb footprint. *International Journal of Geographical Information Science*, 23(4), pp. 513–529.
- Volters, D. (1998) *Feng shui*. Belgrade, Esoteria.
- Whedon, C. A. (2000) Frames of reference that address the impact of physical environments on occupational performance. *Work*, 14(2), pp. 165–174.
- Wu, W. Y., Yau, O. H. M. & Lu, H. Y. (2012) Feng shui principles in residential housing selection. *Psychology & Marketing*, 29(7), pp. 502–518.
- Wong, E. (1996) *Feng shui*. Boston, Shambala.
- Wong, E. (2001) *A master course in feng shui*. Boston, Shambala.
- Xu, J. (2003) *A framework for site analysis with emphasis on feng shui and contemporary environmental design principles*. Doctoral thesis. Blacksburg, VA, Virginia Polytechnic Institute and State University.
- Xu, P. (1998) Feng shui models structured traditional Beijing courtyard houses. *Journal of Architectural and Planning Research*, 15(4), pp. 271–282.
- Xu, Z. (2004) Geomancy theories and behaviour psychology. *Journal of Hefei University of Technology*. Available at: http://en.cnki.com.cn/Article_en/CJFDTotal-HFGS200402034.htm (accessed: 1. Mar. 2018).
- Yau, O. H. M. (2012) The key components of feng shui and their implications for marketing. *Psychology & Marketing*, 29(7), pp. 479–487.
- Yoon, H. K. (1980) The image of nature in geomancy. *Geo Journal*, 4(4), pp. 341–348.

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mestni toplotni otok urban heat island
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