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Revija ***Urbani izziv*** je namenjena razširjanju znanstvenih in strokovnih dognanj ter obravnavi problemov urejanja prostora. Na leto izideta dve številki. Prva številka izide junija, druga decembra. *Urbani izziv* se vsebinsko deli na dva dela. Prvi (daljši) del se imenuje »Članki«. V njem so objavljeni izvirni in pregledni znanstveni članki, kratki znanstveni prispevki in strokovni članki. Članki, ki so objavljeni v tem delu revije, so recenzirani. Drugi (krajši) del se imenuje »Predstavitve in informacije« in je namenjen objavi recenzij, predstavitvam (na primer knjig, projektov, dogodkov, predavanj, konferenc in podobno), knjižničnim informacijam in podobno. Prispevki, ki so objavljeni v tem delu revije, niso recenzirani. *Urbani izziv* je dvojezična revija – vsi prispevki so objavljeni v slovenskem in angleškem jeziku. Povzetki in polna besedila člankov so vključeni v slovensko podatkovno zbirko COBISS in slovensko digitalno knjižnico dLib.si ter v mednarodne bibliografske baze SCOPUS Elsevier, ERIH PLUS, EBSCOhost (Art & Architecture Complete, Academic Search Complete), ESCI (Clarivate Analytics), ProQuest (ProQuest Central), CEEOL (Central and Eastern European Online Library), IBSS (International Bibliography of Social Sciences), IBZ (International Bibliography of Periodical Literature in the Humanities and Social Sciences), GEODOK (Geographic Literature Database), EZB (Electronic Journals Library), CGP (Current Geographical Publications), ICONDA (International Construction Database), DOAJ (Directory of Open Access Journals), OCLC (Online Computer Library Center), Ulrich's Periodicals Directory, Academic Journals Database, Sciencegate, Index Copernicus International, J-Gate in Genamics JournalSeek. Revija je vpisana v razvid medijev, ki ga vodi Ministrstvo za kulturo Republike Slovenije, pod zaporedno številko 595. Revija izhaja s podporo Javne agencije za raziskovalno dejavnost Republike Slovenije.

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Naslov uredništva
Urbanistični inštitut Republike Slovenije
Urbani izziv – uredništvo
Trnovski pristan 2, SI-1000 Ljubljana, Slovenija

Telefon: + 386 (0)1 420 13 10
E-naslov: urbani.izziv@uirs.si

Editor's address
Urban Planning Institute of the Republic of Slovenia
Urbani izziv – The Editor
Trnovski pristan 2, SI-1000 Ljubljana, Slovenia

Telephone: +386 (0)1 420 13 10
E-mail: urbani.izziv@uirs.si

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Odgovorni urednik, direktor/Representative, Director
Igor Bizjak

Glavna urednica/Editor-in-Chief
Damjana Gantar

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Kje je naše mesto?

V preteklosti je bilo zelo jasno, kaj je mesto in kaj je podeželje. Mesto so zaznamovale njegove funkcije in dejavnosti ter svoboščine, ki so jih imeli prebivalci. Mesta so bila svetle točke razvoja, centri gospodarstva, znanja in kulture. Njihov zgodovinski razvoj je sosledje korakov in prilagajanje danim razmeram, virom in vrednotam, zato lahko rečemo, da so bolj proces kot rezultat. Posledično niti dve mesti nista enaki - vsako ima svojo identiteto, ki jo lahko razberemo iz prostora, značilnih ulic in stavb, iz načina življenja prebivalcev, iz urbanega utripa.

V razvoju vsakega mesta se vedno pojavijo tudi ovire, ki jih mesto ali uspešno zaobide ali pa se razvoj upočasni in mesto izgubi svojo konkurenčnost. Do uspeha vodi več strategij, danes poznamo pametna mesta, trajnostna mesta, zelena mesta, najboljša mesta za življenje in najslabša mesta za življenje. Nekje se približujejo idealu vrtnega mesta, druga mesta pa so z rastjo izgubila človečnost in svoje bistvo.

V junijski številki Urbanega izziva lahko preberete štiri članke, ki so vezani na problematiko obravnavanega mesta. V dveh pakistanskih mestih: Pešavar in Hafizabad se srečujejo z rastjo števila prebivalcev in prometa, avtorji so raziskali vplive na izbiro lokacije doma ter na uporabo odprtega mestnega prostora, v Tokiu dinamičen ritem mesta sili ljudi k preoblikovanju življenjskih navad in občutka navezanosti na dom, v Odesi na podlagi izkušenj iz evropskih pristaniških mest iščejo rešitve za regeneracijo mestnega središča in obenem za vzdržno rast pristaniške dejavnosti, ki je bila ključna za nastanek mesta. Vsebino revije dopolnjujeta še članek o vplivu kakovosti prostorskih podatkov na učinkovitost obdavčenja nepremičnin in predstavitev mednarodnega projekta, ki je namenjen razvoju in izvedbi na naravi temelječih rešitev v mestih.

V nasprotju z dnevnimi novicami so znanstvene objave dokaj optimistične, širijo obzorja in prinašajo uporabne ugotovitve. Čeprav se vsaj objave v humanistiki in družboslovju morda zdijo manj ključne za reševanje življenj, je dobro že to, da nas spodbudijo k zavedanju problemov, podrobnejšemu raziskovanju in iskanju novih rešitev. Želim vam prijetno in poučno branje!

Damjana Gantar,
glavna urednica

Where is our city?

In the past, the distinction between the city and the countryside was very clear. The city was characterized by its functions and activities, as well as freedoms that its residents could enjoy. Cities were the beacons of development and the centres of the economy, knowledge, and culture. Their historical development reflects a sequence of steps and adaptations to particular conditions, resources, and values, which is why they can be seen more as a process than a result. Consequently, no two cities are alike; each has its own identity, which can be seen from the space itself, typical streets and buildings, residents' lifestyles, and the city vibe.

The development of any city also encounters obstacles that a city can either successfully circumvent or its development slows down and the city loses its competitive edge. Several strategies lead to success, and today concepts like smart, sustainable, green, and most and least liveable city are being used. Some of them come very close to the garden city ideal, whereas expansion has caused others to lose their humanity and essence.

The June issue of *Urbani izziv* features four articles related to the issues of a specific city. The Pakistani cities of Peshawar and Hafizabad are dealing with population and traffic growth, and the authors have explored the influences on residential location choices and the use of urban open space. In Tokyo, the dynamic urban rhythm forces people to transform their habits and sense of place attachment. In Odesa, experience from European ports is used to find solutions for both the regeneration of the city centre and the sustainable growth of port activities, which were key to the establishment of the city. This issue is further complemented by an article on the impact of spatial data quality on the efficiency of the property tax system and a presentation of an international project focusing on developing and implementing nature-based solutions in cities.

Unlike daily news, research publications are fairly optimistic, expand people's horizons, and yield useful findings. Even though humanities and social-science publications may seem less vital to saving lives, they nonetheless encourage us to become aware of problems, conduct more detailed research, and seek new solutions. I wish you a pleasant and instructive read.

Damjana Gantar,
editor-in-chief

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Maryam AMAN
Abdul WAHEED
Malik Asghar NAEEM
Syed Akhtar Ali SHAH

Izvajanje koncepta skupnega prometnega prostora s preobrazbo ulic v poslovnem središču Pešavarja v Pakistanu

Zamisel o skupnem prometnem prostoru (ang. *living streets*) se je razvila šele nedavno, upošteva pa se predvsem pri prostorskem načrtovanju in razvoju mest. Njena glavna namena sta zagotavljanje varnega dostopa za vse vrste prometa in s tem osredotočanje na splošni trajnostni razvoj mesta. Avtorji v članku proučujejo značilnosti glavnih prometnih žil v poslovnem središču Pešavarja z vidika koncepta skupnega prometnega prostora, na podlagi česar bi se lahko sprejeli ustrezni ukrepi za izboljšanje tega mestnega območja. Predpostavljajo, da trenutna infrastruktura skupnega prometnega prostora v poslovnem središču mesta ne zadovoljuje potreb različnih uporabnikov (nakupovalcev, stanovalcev, zaposlenih in ljudi, ki območje uporabljajo za rekreacijo). Da bi določili in analizirali osnovno javno infrastrukturo v poslovnem središču mesta, so opravili raziskavo, ki je vključevala opazovanje in anketo. Raziskava je razkrila težave, kot so hrup, onesnažen zrak, smeti, pomanjkanje ustrezne javne prometne infrastrukture in površin za pešce ter slabo upravljanje prometa. Anketiranci so izrazili močno nezadovoljstvo z zdajšnjo ureditvijo za pešce in parkiranje na ulici. Terenska raziskava je poleg tega pokazala, da površine za pešce ne zadovoljujejo potreb pešcev, pomanjkanje uličnе opreme pa prebivalce odvrača od tega, da bi se bolj družili.

Ključne besede: skupni prometni prostor, varnost pešcev, privlačnost za bivanje, preureditev v območja za pešce, dostopnost, poslovna središča, trajnostnost

1 Uvod

Privlačnost za bivanje (ang. *liveability*) je sestavni del koncepta trajnostnega mestnega razvoja (Dempsey idr., 2011). Spodbujanje hodljivosti in dostopnosti na podlagi različnih načinov prevoza je eden glavnih ciljev prevoznega sektorja, povezanih s privlačnostjo za bivanje in trajnostnim razvojem (Victoria Transport Policy Institute, 2010). To kaže na pomembno vlogo hodljivosti z vidika privlačnosti mesta za bivanje, saj spodbuja oblikovanje okolju prijaznih in trajnostnih območij ter lokacij, privlačnih za bivanje (Shamsuddin idr., 2012). Leta 2013 je bila v okviru programa Združenih narodov za naselja UN-Habitat predstavljena zamisel o blaginji mest (ang. *city prosperity*), ki predvideva, da ima mesto ulice s potencialom, ki kot javni prostori spodbujajo druženje, krepijo varnost, izboljšujejo gospodarsko in ekološko trajnost ter zagotavljajo dostop motoriziranemu in nemotoriziranemu prometu (UN-Habitat, 2013). Pri konceptu mesta, privlačnega za bivanje, je močan poudarek na uvajanju trajnostnih oblik prevoza, ki pomagajo zmanjšati onesnaženost zraka in hrup ter spodbujajo prebivalce k hoji oziroma hodljivost, ki se lahko doseže z ureditvijo skupnega prometnega prostora (Lennard, 2008). Glavni cilj uvedbe skupnega prometnega prostora je narediti mesto varno in dostopno (Dempsey idr., 2011). Z njo postanejo alternativni načini prevoza ljudem privlačnejši, hkrati pa oblasti spodbudi k preobrazbi javnih prostorov, s čimer postanejo ulice varnejše in živahnejše za prebivalce (Dumbaugh in Gattis, 2005). Po podatkih Svetovne zdravstvene organizacije se po svetu vsako leto v prometnih nesrečah poškoduje približno 50 milijonov ljudi, 1,2 milijona pa jih umre. Če ne bodo sprejeti novi ukrepi za preprečevanje prometnih nesreč, se bodo te številke v prihodnjih 20 letih predvidoma povečale za 65 % (Gulzar idr., 2012). Današnje ceste niso zgrajene kot monofunkcionalne enote, ki jih lahko uporabljajo samo avtomobili, ampak so oblikovane tako, da jih lahko hkrati uporabljajo različni udeleženci v prometu, tj. kolesarji, pešci in vozniki osebnih vozil (Pojani in Stead, 2015). V Pešavarju je cestno omrežje namenjeno samo motornim vozilom, saj so bile ceste zgrajene kot monofuncionalne enote, ki pogosto nimajo niti najosnovnejše ulične opreme (Borthakur, 2017). Ljudje se spopadajo z ovirami, kot so ulični prodajalci na pločnikih in nedovoljeno parkiranje, ki omejujejo njihovo mobilnost v poslovnem središču. Avtorji v članku analizirajo trenutno infrastrukturo v poslovnem središču Pešavarja z vidika koncepta skupnega prometnega prostora in predpostavljajo, da ne zadovoljuje potreb različnih uporabnikov (nakupovalcev, stanovalcev, zaposlenih in ljudi, ki območje uporabljajo za rekreacijo).

2 Značilnosti skupnega prometnega prostora

Cilj skupnega prometnega prostora (ang. *living streets* ali *complete streets*) je zagotoviti prometni sistem za vse uporabnike, vključno s pešci, kolesarji in vozniki. Sestavljen je iz kolesarskih poti, površin za pešce, ulične opreme, ukrepov umirjanja prometa, prometnih otokov, prehodov za pešce in podobnih prvin. Ključno za njegovo oblikovanje je ustvarjanje naravne, funkcionalne in prijetne ulične krajine (Burden in Litman, 2011).

Za skupne prometne prostore ni univerzalnega načrta, saj je vsak drugačen in zadovoljuje izključno potrebe svoje skupnosti in okolice. Skupni prometni prostor lahko sestavljajo prometni pasovi za avtobuse, pločniki, kolesarske poti, prometni otoki, postajališča javnega prometa, semaforji in prehodi za pešce, razširitve pločnikov, ožji prometni pasovi, krožišča in druge podobne prvine (Bain idr., 2012). Zamisel o skupnem prometnem prostoru se je močneje razvila v zadnjih desetletjih, zdaj pa se upošteva pri načrtovanju in razvoju mest po svetu (Chourabi idr., 2012). Koncept skupnega prometnega prostora ni omejen samo na ureditev pločnikov in kolesarskih poti, ampak se osredotoča na splošen trajnostni razvoj mesta. Pri snovanju skupnega prometnega prostora je pozornost usmerjena na mikroraven, kar omogoča, da se urbanisti osredotočijo na pešce in pločnike ter spodbujajo oblikovanje gosto pozidanih sosesk. Stanovalci pa se zaradi tega raje odločajo za hojo in kolesarjenje kot vožnjo z avtomobilom. S skupnimi prometnimi prostori postanejo soseske varnejše, funkcionalnejše, udobnejše in dostopnejše, kar spodbuja medosebne odnose in s tem razvoj celotne skupnosti (Gehl, 2013).

Podpiranje zdravega okolja, izboljševanje življenjskih razmer v soseskah, razvoj skupnosti in spodbujanje ljudi k uporabi javnih prostorov so ključne prvine koncepta skupnih prometnih prostorov, s katerimi se ukvarjajo urbanisti po vsem svetu (Carmona, 2010; Gehl, 2011). Skupni prometni prostori poleg tega pomagajo pri oblikovanju bolj trajnostnega mesta, saj zmanjšujejo onesnaženost ter med prebivalci krepijo zdravje in zadovoljstvo (Farr, 2011). Posebna prvina privlačnosti za bivanje je tudi kakovost življenja in ker sta ta dva pojma močno prepletena, se običajno uporabljata kot sinonima. Upoštevanje kakovosti življenja je torej ključno pri oblikovanju skupnega prometnega prostora na podlagi zamisli o privlačnosti za bivanje (Miller idr., 2013). Povezanost teh dveh prvin hkrati izraža močno povezavo med različnimi značilnostmi razmer in krajev, ki vplivajo na splošna prizadevanja za vzpostavljanje kraja (ang. *place making*; Appleyard idr., 2014). Na podlagi

izsledkov v literaturi opozarjajo na številne prvine skupnega prometnega prostora, ki imajo pomembno vlogo pri izboljšanju dinamike mesta in življenjskih razmer v njem. Vsaka prvina pa ne more biti vključena v vsako mesto, saj se različna mesta spopadajo z različnimi težavami (Eckerson, 2010).

Večina raziskovalcev meni, da je ureditev kolesarskih poti najboljši način izboljšanja mestne krajine, saj pomagajo zmanjšati prevlado avtomobilov (Barnett, 2018). Kolesarske poti poleg tega zmanjšujejo onesnaženost in prometne zastoje, zaradi česar postane mesto dostopnejše in okolju prijaznejše (Bain idr., 2012). Ulična krajina soseske je ločen ekosistem, ki je poleg številnih drugih sistemov sestavljen iz gospodarskega sistema, družbenega sistema, zelenih mestnih površin in prometnega sistema. Ekosistem ulične krajine posnema naravo in ustvarja vzajemne odnose v medsebojno prepletenem sistemu, s čimer trajnostno izboljša lokalno gospodarstvo, naravno okolje ter vire soseske in njenih prebivalcev (Pucher in Buehler, 2011). Tudi klopi, razsvetljava, krajinsko urejene površine in drevesa so del ulične krajine. Imajo pomembno vlogo pri ustvarjanju živahnega utripa na ulicah in povečajo dinamičnost soseske. Uporaba avtohtonih rastlin je za ulično krajino ključna, saj te rastline najbolje rastejo v svojem avtohtonem okolju. Namestitev klopi za pešce krepi lokalno gospodarstvo in poskrbi za živahnejše ulice, na katerih se lahko domačini sprehajajo, dobivajo s prijatelji, nakupujejo in preživljajo prosti čas (McPherson idr., 1999). Pri sodobnem urbanističnem načrtovanju se pogosto zanemarja pomen območij za pešce, saj se urbanisti raje osredotočajo na zmanjšanje motečega vpliva pešcev na ulicah. To zlahka dosežejo z uvedbo zvišanih pločnikov, gradnjo pešcon med stavbami in drugimi rešitvami, ki poskrbijo za to, da se pešci ne zadržujejo na cestah. Cilj koncepta skupnega prometnega prostora pa je vrniti ljudi na ulice na podlagi oblikovanja javnih prostorov, privlačnih za pešce (Bain idr., 2012). Tudi za ulično opremo se je izkazalo, da spodbuja pešce k temu, da se pogosteje zadržujejo na ulicah, saj v soseski ustvarja okolje, prijazno nemotoriziranemu prometu (Soltani in Bosman, 2005). Ulična oprema najpogosteje vključuje stebričke, klopi, avtomate za prodajo časopisov, informativne table, javno umetnost, korita za rože, smetnjake, pločnike, javna stranišča in parkomate. Te prvine izboljšajo utrip ulice, saj postaneta zaradi njih kolesarjenje in hoja privlačnejša. Namestitev ulične opreme pa je odvisna od razporeditve ulične razsvetljave in dreves, ki določajo ulično podobo (Dempsey idr., 2011).

2.1 Izbrani primeri izvajanja koncepta skupnega prometnega prostora

V nadaljevanju so navedeni primeri izvajanja koncepta skupnega prometnega prostora iz različnih mest po svetu, pri čemer je eden najuspešnejših primerov New York. Čeprav se Pešavar po številu prebivalstva in velikosti ne more primerjati z New Yorkom, ima podobno mestno tkivo. Uprava New Yorka je uspešno uvedla različne prvine skupnega prometnega prostora, kot sta ulična oprema in omejen dostop vozil, ki sta povečala število pešcev. Po drugi strani pa se Kuala Lumpur spopada s podobnimi težavami kot Pešavar, kar se je izkazalo za uporabno pri proučevanju potreb uporabnikov poslovnega središča Pešavarja.

2.1.1 Preobrazba javnih prostorov v New Yorku

Po vsem mestu so bili urejeni območja za pešce in ulične terase, zaradi katerih ljudje ne parkirajo več na ulicah. Ta območja so oblikovana tako, da ljudi privlačijo s senco in površinami za sedenje. Večina križišč, na katerih je prevladoval motorizirani promet, je bila preoblikovana v ulične terase, ki so pomagale umiriti promet in so ustvarile varnejše površine za pešce (Hou, 2010; Shaftoe, 2012). Na gosto pozidanih območjih so nekatere ulice povsem zaprte za promet in napolnjene z ulično opremo, kar je ključno za ulične terase, kjer se ljudje lahko usedejo in sprostijo. Zelo gosto pozidana območja imajo le malo odprtih površin ali teh sploh ni, zato na novo urejena območja za pešce prebivalcem nudijo prostor za druženje (Gehl, 2013). Opisani ukrepi bi lahko izboljšali tudi družbenoekonomske razmere v poslovnem središču Pešavarja.

2.1.2 Ulice v azijskih mestih: hodljivost v Kuala Lumpurju

Iz izsledkov več raziskav, opravljenih v Kuala Lumpurju, je razvidno, da so tamkajšnje turistične destinacije dokaj primerne za pešačenje, manjše ulice pa ponujajo le malo prostora za pešce, kar vpliva na splošno turistično izkušnjo, saj avtomobili prevladujejo na večini mestnih ulic (Sreetheran idr., 2011). Raziskave so pokazale še, da bi bilo treba za oblikovanje skupnega prometnega prostora izboljšati razsvetljavo in prehode za pešce, s čimer bi se povečala varnost območja ponoči in čez dan. Za prijetno sprehajanje turistov in domačinov pa bi bili potrebni tudi osenčeni in širši pločniki. Izkazalo se je, da je varna in prijetna hoja najpomembnejši dejavnik, ki vpliva na izboljšanje izkušnje pešcev v mestnem središču (Zakaria in Ujang, 2015). Za uvedbo skupnega prometnega prostora so torej pomembne različne prvine, kot so razsvetljava, prehodi za pešce ter osenčeni in širši pločniki.

2.1.3 Skupni prometni prostori v Indiji

Prizadevanja za spodbujanje hodljivosti in infrastrukture za pešce v šestih indijskih mestih v sodelovanju z azijsko razvojno banko so pokazala, da so za preobrazbo mestnih ulic potrebni obsežni projekti, ki vključujejo več kot samo izboljšanje prometnih razmer (Leather idr., 2011). Dodatne raziskave so

pokazale, da se v različnih mestih po Indiji izvajajo manjši projekti za izboljšanje hodljivosti, obsežnejši projekti pa se ne načrtujejo. Razen obnove nekaj kilometrov pločnikov drugi večji posegi niso načrtovani. Večina gradbenega sektorja se namesto tega raje osredotoča na širjenje cestnega omrežja za avtomobile in javni promet (Datey idr., 2012). Izboljšanje javnega prevoza je potrata kapitala, saj se ne izboljšuje njegova dostopnost, to pa lahko povzroči upad števila potnikov tudi na novi infrastrukturi, ki se trenutno gradi (Leather idr., 2011). V Suratu so načrtovani podhodi in desetmetrski nadhodi, v Čenaju pa je inštitut za prometno in razvojno politiko na podlagi načel skupnega prometnega prostora uredil kolesarske poti v mestu kot del pilotnega projekta. Osnutek glavnega načrta predvideva širše pločnike vzdolž stanovanjskih in glavnih trgovsko-poslovnih ulic ter poskuša preprečiti, da bi si pločnike prisvojili ulični prodajalci, da bi na njih ljudje parkirali vozila ali da bi nanje nameščali električne transformatorje, reklamne panoje in druge prvine. V mestu Pune sta indijski tehnološki inštitut iz Delhija (IIT Delhi) in indijski centralni inštitut za cestni prevoz (CIRT) zasnovala glavni načrt gradnje sistema hitrih avtobusov, ki vključuje tudi podhode za pešce vzdolž poskusnega koridorja, projekt pa obsega tudi gradnjo nadhodov (Bhattacharyya in Mitra, 2013). Navedeni primeri so pomembni, saj imata Pakistan in Indija skoraj enako kulturno in socialno strukturo, uporabniki poslovnih mestnih središč v obeh državah pa se spopadajo s podobnimi težavami. Študija primerov iz Indije je torej pokazala, da projekti manjšega obsega ne morejo izboljšati dostopnosti pešcev in da je za reševanje tega problema potreben celostni pristop.

2.2 Načrtovanje in raba javnih prostorov v Pešavarju

Že več kot dve desetletji se Pešavar, glavno mesto pakistanske province Kiber Paktunkva, spopada s težavami, ki jih povzroča urbanizacija, te so prometni zastoji, naraščanje števila prometnih nesreč, onesnažen zrak, smeti in hrup (Hashmi, 2016). V zadnjem desetletju je število njegova prebivalstva skokovito naraslo, razlogi za to pa so zelo različni (naval notranje razseljenih ljudi, naravna rast prebivalstva in množične migracije zaradi političnih nemirov). Zaradi vsega naštetega se je neverjetno povečalo število lastnikov osebnih vozil, kar povzroča onesnaženost zraka, hrup, vse večjo porabo fosilnih goriv in prometne nesreče. Težava pa ni samo urbanizacija, ampak tudi dejstvo, da je Pešavar že več kot dvajset let edino zatočišče za afganistanske begunce in Pakistance, ki so notranje razseljeni zaradi političnih nemirov v državi. Naravna rast števila prebivalstva ter pritok afganistanskih beguncev in notranje razseljenih Pakistancev sta glavna vzroka za hitro rast števila prebivalcev Pešavarja, zaradi katere je bilo treba zgraditi dobro načrtovano cestno omrežje. Mestna uprava je to zagotovila tako, da je v mestu zgradila glavne prometne žile (Peshawar Development Authority, 2017), ki pa jih lahko uporabljajo samo avtomobili, saj so bile oblikovane kot monofunkcionalne ceste (Borthakur, 2017). V zadnjih 40 letih sta se tako močno povečali števili prebivalcev in avtomobilov, razširjena so bila tudi cestna omrežja, s tem pa se je hkrati povečala tudi nevarnost trkov ali prometnih nesreč (Hyder idr., 2000). V letih 2010 in 2011 je bilo v Pakistanu skupno 9.723 prometnih nesreč, od tega 2.722 v provinci Kiber Paktunkva (Pakistan Bureau of Statistics, 2012). V letih 2015 in 2016 se je skupno število nesreč zmanjšalo na 9.100, pri čemer se jih je 4.287 zgodilo v provinci Kiber Paktunkva (Pakistan Bureau of Statistics, 2012). V teh petih letih se je skupno število nesreč v državi zmanjšalo, v provinci Kiber Paktunkva pa se je skoraj podvojilo.

V Pešavarju so bile ulice vedno prilagojene motoriziranemu prometu, kar je v nasprotju s konceptom skupnih prometnih prostorov in trajnostnih ulic, ki zadovoljujejo potrebe različnih udeležencev v prometu na isti ulici in dajejo prednost pešcem, ki po ulici hodijo in jo doživljajo kot javni prostor (Gulzar idr., 2012). Pešavarski odsek za urbanistično politiko se ukvarja z urbanističnimi projekti, ki naj bi izboljšali razmere, vendar tem projektom manjkajo celostni pristop in nekatere oblikovne prvine, povezane z načeli trajnostnega razvoja, kot so enakost in enakopravnost, izboljšana kakovost življenja uporabnikov poslovnega središča in lepše okolje. Te prvine je treba vključiti v poslovno središče mesta, da bi izboljšali družbenoekonomski položaj tega območja in zadovoljili potrebe različnih udeležencev v prometu.

3 Gradivo in metode

Avtorji so v raziskavi uporabili kvalitativne in kvantitativne metode ter na podlagi zbranih podatkov analizirali ulice v poslovnem središču Pešavarja. Mešane metode so uporabili zato, ker so bile primerne za iskanje odgovorov na raziskovalna vprašanja, povezana z glavnimi prometnimi žilami v poslovnem središču, hkrati pa so pomagale pojasniti razloge za trenutne razmere. Cilj raziskave je izboljšati prometne razmere v poslovnem središču Pešavarja, tako da bi bile zadovoljene tudi potrebe nemotoriziranega prometa, pri čemer je določanje ulic, ki bi jih bilo treba spremeniti v skupni prometni prostor, odvisno od značilnosti posamezne ulice. Avtorji so na različnih delih proučevanega območja izvedli terensko raziskavo, s katero so določili in analizirali osnovne značilnosti proučevanega območja ter je vključevala opazovanje in anketo. Tamkajšnje razmere in zadovoljstvo uporabnikov z različnimi prvinami so analizirali na podlagi indeksa zadovoljstva.

- Terenska raziskava in opazovanje: ulice v poslovnem središču Pešavarja imajo različne značilnosti, zato so av-

torji določili tiste, ki še slabšajo razmere na proučevanem območju. To so storili tako, da so si izbrane ulice ogledali in jih fotografirali. Pridobljeni kvalitativni podatki so jim pomagali razumeti razmere na proučevanem območju, pri čemer so avtorji oblikovali seznam kazalnikov, ki so jih določili na podlagi pregleda literature. Kazalnike so upoštevali tudi pri pripravi vprašalnika za anketo, vključevali pa so dogajanje na ulici, glavne razloge za gibanje na ulici, ulično zasnovo, dostopnost, težave, povezane s parkiranjem in s kolesarjenjem, površine za pešce, razsvetljavo, varnost, ulično opremo in čistočo (Majeed, 2012; Nilles, 2016). Navedeni kazalniki so bili izbrani, ker so bili pomembni za raziskavo.

- Anketa: z anketo so avtorji določili družbenoekonomski položaj lokalnih prebivalcev, njihove skrbi glede trenutnih razmer in njihove preference v zvezi s skupnim prometnim prostorom na proučevanem območju. Ker so avtorji za anketo izbrali del poslovnega vozlišča mesta, so velikost vzorca izračunali na podlagi formule, ki sta jo razvila Krejcie in Morgan (1970). V skladu s to formulo je bilo v anketo vključenih 123 oseb. Interval zaupanja je znašal 95 %, kar je zagotavljalo točnost raziskave. Med anketiranci so bili uporabniki proučevanega območja, izbrani pa so bili s sistematičnim naključnim vzorčenjem, kar je zagotavljalo nepristranskost raziskave. Vsak deseti anketiranec je moral izpolniti vprašalnik, ki so ga avtorji sestavili za zbiranje primarnih podatkov.
- Indeks zadovoljstva: avtorji so stopnjo zadovoljstva izračunali na podlagi indeksa zadovoljstva, ki ga je razvil Yeh (1972). Z njim so primerjali zadovoljstvo anketirancev s parkirišči na proučevanem območju. Vrednost +1,00, pomeni močno zadovoljstvo, vrednost 0,00 pomeni sprejemljivo zadovoljstvo, vrednost −1,00 pa nakazuje nezadovoljstvo (Yeh, 1972, 1975). Indeks je bil uporabljen že v več raziskavah (Anwar idr., 2008) in se je izkazal kot učinkovit pokazatelj stopnje zadovoljstva ali nezadovoljstva (Abdu idr., 2014). Za merjenje zadovoljstva uporabnikov so bile uporabljene naslednje spremenljivke: površine za pešce, parkirišča, kolesarska infrastruktura, infrastruktura za pešce ter njena dostopnost in vzdrževanje, varni prehodi, ukrepi umirjanja prometa, zeleni nasadi kot vmesna varovalna območja, ulična oprema, varnost in čistoča. Z oceno zadovoljstva so lahko avtorji raziskave bolje razumeli potrebe in zahteve uporabnikov glede izboljšanja dostopnosti proučevanega območja.

Podatki, pridobljeni s terensko opazovalno raziskavo, so bili vneseni v statistični program SPSS, v katerem so avtorji analizirali pogostost odgovorov. Tabelarne rezultate, pridobljene z analizo v tem programu, so nato v Excelu pretvorili v grafično obliko. Za analizo zadovoljstva anketirancev z varnostjo, vidljivostjo, preprostostjo uporabe in drugimi kazalniki so uporabili indeks zadovoljstva, ki so ga uporabili tudi pri analizi preferenc anketirancev glede morebitne prihodnje ulične opreme, prehodov za pešce, izboljšanih pločnikov in podobnega.

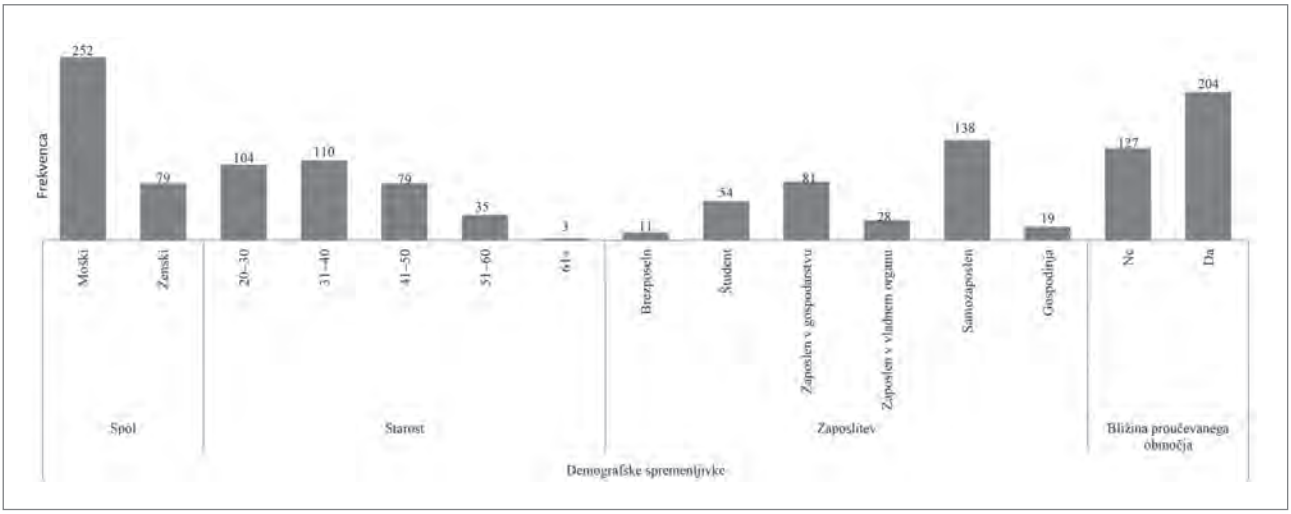
4 Študija primera v Pešavarju: izsledki in razprava

Z vidika prometnih razmer je Pešavar eno izmed prometno najbolj obremenjenih in onesnaženih mest v Pakistanu. Prevelik promet na ozkih cestah in dejstvo, da se trgovine in tržnice širijo na cesto, povečujeta obremenjenost že tako prenatrpanega cestnega omrežja. Zlasti za ženske in otroke je pešačenje skoraj nemogoče, saj pločnike v glavnem zasedajo ulični prodajalci. Opisano vse bolj povečuje hrup in onesnaženost zraka v mestu, saj je v njem zelo malo zelenih površin (Ali idr., 2012). Zaradi močne rasti števila prebivalstva vsako leto hitro narašča tudi število registriranih vozil (The Urban Unit, 2016), delež nemotoriziranega prometa v mestu, v katerega spadajo tudi pešci, pa je samo 2 %. Razlogi za tako majhen delež so pomanjkanje ustrezne infrastrukture (pločnikov in semaforjev), šibka varnost zaradi slabega sistema nadzora prometa, slabe povezave za pešce med omrežjem javnega prevoza in različnimi dejavnostmi in objekti v mestu ter to, da javni organi neustrezno izvajajo predpise (The Urban Unit, 2016).

Podatki za obdobje 2003 – 2012 kažejo, da se je v desetih letih število prometnih nesreč na trgovsko-poslovnih območjih, kot je Saddar, povečalo. V tem obdobju se je v soseski Saddar zgodilo 39 smrtnih nesreč in 155 nesreč brez smrtnega izida. V nesrečah je umrlo 40 ljudi, med katerimi je bilo 70 % pešcev, poškodovalo pa se je 189 ljudi, od tega 50 % pešcev (Shah, 2014). Podatki kažejo, da je mobilnost omejena zaradi slabe dostopnosti in povezanosti različnih dejavnosti, prevladujočih družbenoekonomskih značilnosti območja, nepremišljenega urbanističnega načrtovanja in slabe infrastrukture javnega prevoza. Ključno je torej razumeti trenutne razmere na tem območju in težave tamkajšnjih prebivalcev in obiskovalcev (The Urban Unit, 2016). Avtorji so za raziskavo izbrali sosesko Saddar, ki velja za največje trgovsko-poslovno vozlišče v Pešavarju, saj meri 17,5 ha. Na sliki 1 so prikazane ceste in ulice, ki so bile izbrane za terensko raziskavo (npr. ulica Saddar, ki poteka od severovzhoda do jugozahoda).

Z vprašalnikom so avtorji od anketirancev pridobili demografske podatke, prikazane na sliki 2. S slike je razvidno, da je bila večina obiskovalcev proučevanega območja moških. Mobilnost žensk je bila na trgovsko-poslovnem območju omejena in dokaj očitna, saj je bilo anketirank manj kot četrtina. Kot so navedle številne anketiranke, je bil glavni razlog za te razlike med spoloma slabo stanje površin za pešce. Delež žensk bi se mogoče povečal, če bi se razmere na tovrstnih trgovskih

Slika 1: Zemljevid proučevanega območja (vir: Google Maps, 2019)



Slika 2: Demografske značilnosti anketirancev (vir: terenska raziskava)

Preglednica 1: Ocena razpoložljivosti osnovnih cestnih in prometnih prvin

Dejavnost	Značilnosti	Da/ne
Dogajanje na ulici	Kavarne/zunanje površine za sedenje	Ne
	Ovire na pločnikih, ki jih ustvarjajo ulični prodajalci	Da
	Kažipoti za pešce	Ne
Promet	Hitrost vozil je primerna in ne ogroža varnosti pešcev	Ne
	Osnovni ukrepi za umirjanje prometa	Da
	Dodatni ukrepi za umirjanje prometa	Ne
	Konflikti med različnimi udeleženci v prometu	Da
	Hitrost voznikov omogoča varno pešačenje	Ne
	Nevarnost zbitja pešcev	Da
	Razpoložljivost različnih vrst prevoza	Ne
	Avtobusna postajališča	Ne
	Dobre tranzitne povezave	Ne
	Pešci, ki izstopajo iz avtobusov, ovirajo promet	Da
Srednji ločilni pas/prehodi za pešce	Manjša križišča (z razširitvami pločnikov ali otoki za pešce)	Ne
	Srednji ločilni pasovi	Ne
	Prehodi	Ne
	Ustrezna razsvetljava	Ne
Rob cestišča	Urejeni robni pasovi	Ne
	Nadhodi/podhodi	Ne
	Urejeno odvodnjavanje	Ne
	Označena parkirišča ob robu ceste	Da
Parkiranje	Parkiranje na ulici	Da
	Parkiranje zunaj ulice (na urejenih parkiriščih, v garažni hiši ipd.)	Da
	Parkiranje ustvarja vmesni varovalni pas	Da
Parkirna mesta za kolesa in druga vozila	Ločene kolesarske poti	Ne
	Kolesa na cesti	Da
	Konflikti med vozniki in pešci	Da
Pločniki	Primerna ločenost motornih vozil in pešcev	Da
	Razpoložljivost prehodov za pešce	Ne
	Ukrepi za varno prečkanje ceste	Da
	Ustrezna razsvetljava za pešce	Ne
	Varnost med prometnimi konicami	Da
	Dostopen vhod v stavbe	Da
	Neprekinjeni pločniki	Ne
	Ovire na pločnikih	Da
Ulična oprema	Ustrezna opremljenost pločnikov	Da
	Smetnjaki, klopi ipd.	Ne
	Ulična razsvetljava in semaforji	Ne
	Rastline	Ne
	Postajališča za taksije	Ne

Vir: terenska raziskava (2018)

območjih izboljšale. Več kot polovica anketirancev je bila stara med 20 in 40 let, medtem ko je bil delež ljudi, ki so starejši od 60 let ter so bili opaženi in anketirani na tem območju, zelo zanemarljiv. V preglednici 1 so navedeni rezultati opazovalne raziskave, pri kateri so avtorji opazovali različne prvine izbranih delov proučevanega območja, kot so dogajanje na ulici, parkiranje, pločniki, prehodi za pešce, robovi cest, prometne razmere, ulična oprema, parkirna mesta za kolesa in druga vozila ter čistoča.

Avtorji so analizirali razmere v soseski Saddar, pri čemer so ugotovili, da so za to območje značilne najrazličnejše dejavnosti in z njimi povezane stavbe, od pisarn, trgovin na drobno in debelo, restavracij, objektov z zdravstvenimi storitvami, muzejev in verskih zgradb (mošeja, cerkev in tempelj) do velikih nakupovalnih centrov. Na podlagi empirične raziskave izbranega dela proučevanega območja so ugotovili, da je ulično dogajanje v smislu kavarn, zunanjih površin za sedenje in razpoložljivosti avtomatov za prodajo časopisov bolj šibko ali ga sploh ni. Naštete prvine naredijo poslovno središče mesta živahno in pritegnejo ljudi iz okoliških sosesk, kar poveča socialno enakost in gospodarsko vitalnost tega območja. Na proučevanem območju so pešci sedeli na pločniku, kar je poleg vozičkov uličnih prodajalcev ustvarjalo ovire in še večjo gnečo na že tako ozkem pločniku (slika 3).

Na proučevanem območju ni bilo semaforjev, kar bi bil lahko razlog za veliko prometnih nesreč, ki so se tam pripetile. V anketi je večina anketirancev izrazila nezadovoljstvo z infrastrukturo za pešce. Prometnih znakov za voznike ali pešce ni bilo, kar je še en pomemben povzročitelj trkov med vozili in pešci. Širina cestišča na vogalih ulic omogoča veliko hitrost pri zavijanju v desno, zaradi česar so pogosti trki med vozili in pešci. Anketiranci so izrazili močno zaskrbljenost zaradi slabega upravljanja prometa, po njihovem mnenju bi mnoge težave lahko rešili z doslednim izvajanjem prometnih predpisov. Na proučevanem območju so avtorji opazili samo najosnovnejše ukrepe za umirjanje prometa, kot so hitrostne ovire, drugih, kot so otoki za pešce, razširitve pločnikov ali srednji ločilni pasovi, pa ni bilo videti. Na sliki 4 je vidna samo ozka pregrada med prometnima pasovoma.

Zaradi opisanega stanja bi bilo treba na proučevanem območju uvesti dodatne ukrepe za umirjanje prometa, saj tam ni semaforjev za vozila ali pešce, kar povečuje nevarnost, da avtomobil zbije pešce. Po svetu je postala uvedba zvišanih prehodov za pešce in prometnih otokov splošna praksa, ki pešcem olajša premikanje po mestu in preprečuje trke. Kot je razvidno s slike 5, so na izbranem delu proučevanega območja vozniki ves dan parkirali avtomobile na ulici, kar je ustvarjalo nekakšen vmesni varovalni pas med pešci na pločniku in vozili na cesti. Zaradi tega so pešci lažje hodili po pločniku, težje pa so ob

Slika 3: Ovire na pločnikih (foto: Maryam Aman)

Slika 4: Primer upravljanja prometa v mestu (foto: Maryam Aman)

gostem prometu prečkali cesto. Na več mestih so bila na voljo urejena parkirišča zunaj ulic, ki so bila prav tako polno zasedena. Množično parkiranje na ulici in polno zasedena urejena parkirišča zunaj ulic kažejo na veliko uporabo avtomobilov na tem območju. Po svetu se odsvetuje uporaba osebnih vozil na trgovsko-poslovnih območjih in se spodbuja preurejanje ulic v območja za pešce, na proučevanem območju pa bo pomembno vlogo pri zmanjševanju uporabe avtomobilov imela uvedba javnega prometa.

Ukrepi za izboljšanje javnega prometa bi lahko imeli ključno vlogo pri zmanjšanju uporabe avtomobilov na proučevanem območju. Na njem ni parkirnih mest za invalide, kar vzbuja

skrb, saj trenutna parkirišča ne zadovoljujejo potreb voznikov invalidov. Na ulici so ljudje ob pločnikih parkirali pravokotno ali postrani, kar je ustvarjalo varovalni pas za pešce, hkrati pa so s tem avtomobili zasedali precejšen del cestišča. To ogroža voznika parkiranega vozila in mimoidoča vozila, saj je vidljivost voznikov, ki parkirno mesto zapuščajo vzvratno, zelo slaba. Na mestih, kjer lahko vozniki avtomobilov parkirajo vzporedno z ulico, lahko pravokotno na ulico parkirajo tudi mopedisti in motociklisti. Uvedba pločnikov v mestnih središčih ima pomembno vlogo pri izboljšanju dinamike v mestu, saj izboljša življenjske razmere (Seskin in McCann, 2012). Na proučevanem območju so bili pločniki v precej slabem stanju, kar je pešcem povzročalo težave (to so navedli tudi anketiranci). Klančine na koncu pločnikov so bile precej strme, kar je zlasti ljudem na voziČkih oteževalo uporabo pločnika. Pločniki so bili široki približno 1,5 m, ker pa so na njih tudi trgovine in ulični prodajalci razstavljali svoje blago in tako puščali le malo prostora za pešce, so ljudje zelo težko hodili po pločniku.

Na proučevanem območju ni bilo omembe vredne ulične opreme ali odprtih prostorov. Ob vsakem nakupovalnem centru so bili nameščeni ogromni reklamni panoji, ki so po mnenju anketirancev motili pozornost voznikov, zaradi česar bi lahko kateri izmed njih zbil pešca. Označbe parkirnih mest na ulici so zbledele in bi jih bilo treba prebarvati, da bi se parkirna mesta lahko razločila od cestišča. Ulična oprema ima pomembno vlogo pri pritegovanju ljudi v poslovno središče mesta, saj ustvarja prijetno okolje za obiskovalce. To prispeva k boljšemu razvoju skupnosti in boljšim družbenoekonomskim razmeram v poslovnem središču in mestu na splošno. Proučevano območje je bilo na splošno precej onesnaženo, kar je razvidno tudi s slike 6. Anketiranci so zahtevali, da se na tem območju zagotovijo smetnjaki, saj bi pomagali zmanjšati onesnaževanje.

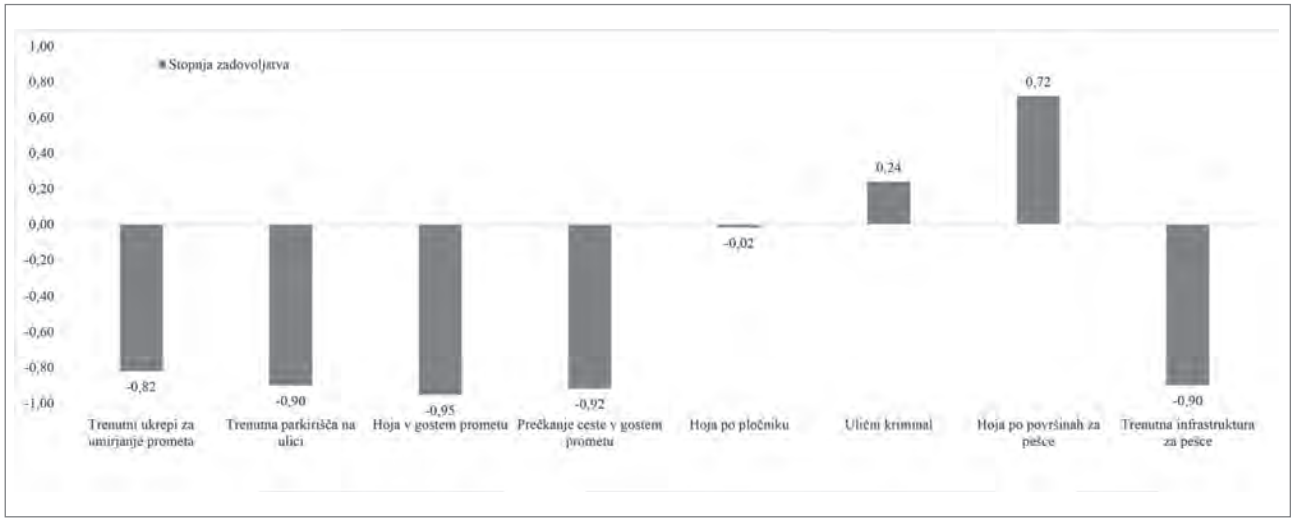
Skupni prometni prostor v glavnem temelji na konceptu zagotavljanja vseh prvin, ki jih potrebujejo uporabniki, ulična parkirišča pa so ena najpomembnejših prvin skupnega prometnega prostora na trgovsko-poslovnem območju (Bain idr., 2012). Na sliki 7 je prikazano zadovoljstvo anketirancev s parkirišči na proučevanem območju. Anketa je pokazala veliko nezadovoljstvo s parkirišči na ulici, predvsem zaradi nezadostnega števila razpoložljivih parkirišč glede na močan pritok prometa. Zaradi slabega sistema javnega prevoza so se celo ljudje, ki živijo v bližini poslovnega središča, tja raje pripeljali z avtom. Drug razlog za nezadovoljstvo je bilo oteženo prečkanje ceste, ki kaže, da ukrepi za umirjanje prometa na tem območju niso uspešni. To zahteva uvedbo ukrepov, ki bi rešili težave, povezane z gostim prometom na proučevanem območju.

S slike 7 je razvidno, da je bila polovica anketirancev poleg tega nezadovoljna s hojo in prečkanjem ceste ob gostem prometu. Na območju ni semaforjev, ki bi voznike opozarjali na

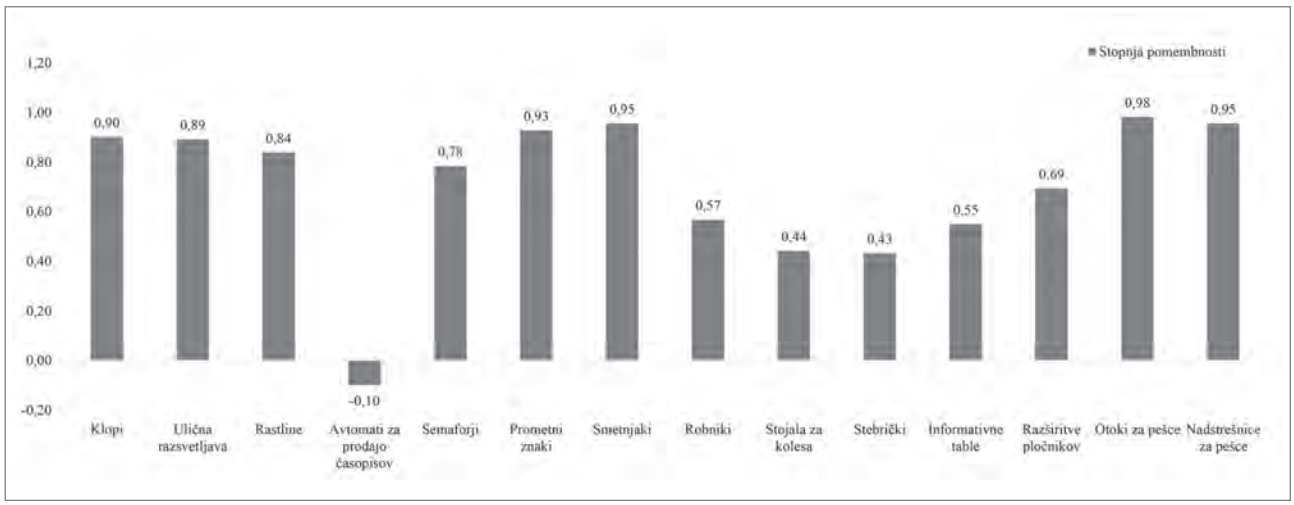
Slika 5: Parkiranje na trgovsko-poslovnem območju (foto: Maryam Aman)

Slika 6: Pomanjkanje čistoče (foto: Maryam Aman)

to, kdaj se morajo ustaviti in pešcem omogočiti, da prečkajo cesto. Več kot polovica anketirancev je bila zadovoljna s hojo po pločnikih, saj so jim vozila, parkirana tik ob pločniku, kljub gostemu prometu dajala občutek varnosti. Ob trgovinah so potekali pločniki, kar je obiskovalcem olajšalo gibanje od ene trgovine do druge. Anketiranci so bili tudi dokaj zadovoljni s stanjem glede uličnega kriminala in sprehajanjem po pločnikih ponoči, saj sta več kot dve tretjini menili, da je območje varno. Ker na njem potekajo najrazličnejše gospodarske in druge dejavnosti, so nekatere izmed njih potekale tudi pozno v noč, zaradi česar je bilo območje tudi ponoči za obiskovalce varno. S slike 7 je razvidno še, da je bila več kot polovica anketirancev nezadovoljna s trenutno infrastrukturo za pešce. Zadovoljni so bili s hojo po pločnikih, ne pa tudi z infrastrukturo za pešce na splošno. Glavna težava je bila, da ta infrastruktura ne poteka neprekinjeno in ni prilagojena obiskovalcem na invalidskih voziČkih. Tudi klančine na koncih pločnikov so zelo strme, kar starejšim in invalidom na voziČkih otežuje uporabo pločnikov. Na proučevanem območju bi se morali upoštevati največji dovoljeni koti klančin, kar bi ljudi vseh starosti in sposobnosti spodbujalo, da obiščejo poslovno središče. Na sliki 7 je prikazana stopnja zadovoljstva anketirancev s trenutno infrastrukturo



Slika 7: Zadovoljstvo anketirancev s trenutno infrastrukturo v poslovnem središču (vir: terenska raziskava)



Slika 8: Najpomembnejše prvine skupnega prometnega prostora v poslovnem središču po mnenju anketirancev (vir: terenska raziskava)

v poslovnem središču Pešavarja. Negativne vrednosti izražajo nezadovoljstvo, pozitivne pa zadovoljstvo.

Cilj koncepta skupnega prometnega prostora je ljudi vrniti na ulice z izboljšanjem zunanjih površin za sedenje na podlagi oblikovanja javnih prostorov, privlačnih za pešce (Bain idr., 2012). Pločniki imajo pomembno vlogo pri lajšanju mobilnosti pešcev. Pri oblikovanju površin za pešce je treba paziti na to, da dopolnjujejo okoliško ulično krajino in ne sekajo ulic (Bain idr., 2012). Avtorji so od anketirancev pridobili podatke o trenutnih površinah za pešce na proučevanem območju. Raziskava je pokazala, da sta velika hitrost vozil in pomanjkanje prehodov za pešce med največjimi težavami, s katerimi se spopadajo pešci na trgovsko-poslovnem območju, in sta najverjetneje posledica slabo urejenih pločnikov. Pešci se težko prebijajo skozi gnečo, saj so pločniki preozki, njihovo uporabo pa ovirajo tudi ulični prodajalci. Skupni prometni prostori prebivalcem sosesk omogočajo dostop do različnih družabnih dejavnosti, ki se spodbujajo z namestitvijo različne ulične opreme (Bain idr., 2012). V anketi so avtorji anketirance povprašali tudi o njihovem mnenju glede ulične opreme. Njihovi odgovori so prikazani na sliki 8. Anketiranci so zahtevali namestitev klopi in ulične razsvetljave. Ker na proučevanem območju ni klopi, je več ljudi sedelo kar na robu pločnika. To nakazuje potrebo po klopeh in drugi ulični opremi.

Da bi v mestu ustvarili skupen prometni prostor, bi bilo treba izboljšati razsvetljavo in infrastrukturo za prečkanje cest, kar bi povečalo tudi varnost pešcev ponoči in podnevi (Zakaria in Ujang, 2015). Na proučevanem območju je bilo zelo malo uličnih svetilk, zato je bila vidljivost ponoči slaba. To pojasni željo anketirancev po boljši ulični razsvetljavi. Večina je zahtevala tudi namestitev semaforjev in prometnih znakov, saj jih na tem območju sploh ni. Večina je podpirala tudi namestitev smetnjakov, ki jih prav tako ni. Odsotnost smetnjakov na trgovsko-poslovnem območju lahko povzroči težave zaradi povečane količine smeti na ulici, kar ljudi odvrača od gibanja po ulicah in pločnikih. Več kot polovica anketirancev se

je strinjala, da bi morali na proučevanem območju namestiti stojala za kolesa. To kaže, da so ljudje pripravljeni kolesariti, stojala pa bi jim olajšala parkiranje kolesa. Večina je podpirala tudi namestitev stebričkov in informacijskih tabel ter ureditev nadstrešnic za pešce, razširjenih pločnikov in otokov za pešce. Zagotavljanje naštetih prvin v poslovnem središču pomaga ustvariti vizualno in funkcionalno privlačno okolje, ki omogoča socialno enakost. S slike 8 je razvidno, katere prvine ulične opreme so bile za anketirance najpomembnejše.

Poleg hoje je kolesarjenje eden najbolj zdravih načinov gibanja po mestu, saj pomaga reševati različna vprašanja, povezana z okoljem in skupnostjo, kot so kakovost življenja, podnebne spremembe, onesnaženost zraka in hrup. V mestnih središčih pa so možnosti za kolesarjenje zaradi prometa pogosto omejene (Steinbach idr., 2011). Če bi se izboljšala potrebna infrastruktura, je kolesarjenju naklonjena večina anketirancev. Tretjina jih živi v predelih mesta, ki niso v neposredni bližini proučevanega območja, zato kolesarjenju niso bili naklonjeni, saj bi bila razdalja do poslovnega središča, ki bi jo morali prekolesariti, prevelika. Menili so, da bi bil dobro načrtovan javni prevoz zanje boljša rešitev.

Anketiranci so bili dokaj zadovoljni z varnostjo na pločnikih, zaradi velike hitrosti vozil pa so bili nezadovoljni z varnostjo pri prečkanju cest. Poleg tega so bili zaskrbljeni zaradi slabih ukrepov za umirjanje prometa. Ker na proučevanem območju ni razširitev pločnikov, pešci zelo težko prečkajo cesto v gostem prometu, ureditev razširjenih delov na pločnikih pa bi jim zagotovila večjo varnost pri prečkanju. Skoraj vsi anketiranci so se strinjali, da bi bilo treba sprejeti ustrezne ukrepe za usmerjanje pešcev k točkam, ki omogočajo varno prečkanje ceste, saj so zaradi čedalje večjega števila prometnih nesreč tovrstni ukrepi ključni za varnost uporabnikov proučevanega območja.

5 Sklep

V članku so avtorji analizirali trgovsko-poslovne ulice v Pešavarju, da bi opredelili trenutne težave in možnosti oblikovanja trajnostnih ulic, privlačnih za bivanje. Pešavar je mesto v Pakistanu, v katerem primanjkuje mnogo infrastrukture, ki bi zadovoljila potrebe vseh udeležencev v prometu, zlasti v njegovem poslovnem središču. Posledično njegov razvoj ni trajnosten, kar vpliva na kakovost življenja prebivalcev in obiskovalcev, zlasti zaradi težav, kot so onesnažen zrak, hrup, slabo upravljanje prometa, pomanjkanje ulične opreme, slaba infrastruktura za pešce in pomanjkanje kolesarske infrastrukture. Ta vprašanja niso vključena v mestne načrtovalske dokumente, saj se ti osredotočajo predvsem na motorizirani promet. Vzrok za to bi bilo lahko to, da oblast slabo razume pomen preurejanja ulic v območja za pešce. Glavni cilj uvedbe skupnega prometnega prostora v mestu je narediti mesto živahno in dostopno za prebivalce. Z njo postanejo alternativni načini prevoza ljudem privlačnejši, hkrati pa spodbudi preobrazbo javnih prostorov, s čimer postanejo ulice varnejše in živahnejše. V raziskavi, navedeni v tem članku, so avtorji proučevali glavno trgovsko-poslovno vozlišče v Pešavarju, njeni izsledki pa bi bili lahko podlaga za sprejetje ustreznih ukrepov za izboljšanje okoljskih in družbenoekonomskih razmer v mestu. Raziskava je razkrila težave, kot so hrup, onesnažen zrak, smeti, pomanjkanje ustrezne javne prometne infrastrukture, slabo upravljanje prometa in pomanjkanje infrastrukture za pešce (zlasti invalide in starejše). Izsledki potrjujejo hipotezo, da neustrezna infrastruktura v poslovnem središču Pešavarja negativno vpliva na splošne družbenoekonomske razmere.

Uvedba koncepta skupnega prometnega prostora na proučevanem območju bi spodbudila oblikovanje zdravih skupnosti, izboljšala kakovost življenja in razmere v soseskah ter domačine spodbudila k preobrazbi javnih prostorov. Z vključitvijo skupnega prometnega prostora v mestno krajino Pešavarja bi torej pomagali oblikovati trajnostno okolje v mestu.

Maryam Aman
National Institute of Transportation, School of Civil and Environmental Engineering, National University of Sciences and Technology (NUST), Islamabad, Pakistan
E-naslov: maryamaman09@gmail.com

Abdul Waheed
National Institute of Transportation, School of Civil and Environmental Engineering, National University of Sciences and Technology (NUST), Islamabad, Pakistan
E-naslov: drwaheed@nit.nust.edu.pk

Malik Asghar Naeem
National Institute of Transportation, School of Civil and Environmental Engineering, National University of Sciences and Technology (NUST), Islamabad, Pakistan
E-naslov: asghar.naeem@nit.nust.edu.pk

Syed Akhtar Ali Shah
Urban and Regional Planning Department, University of Peshawar, Pešavar, Pakistan
E-naslov: shahg@uop.edu.pk

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Simon STARČEK
Maruška ŠUBIC KOVAČ

Vpliv kakovosti prostorskih podatkov na učinkovitost sistema obdavčenja nepremičnin: primer nadomestila za uporabo stavbnega zemljišča

Prostorski podatki niso neposredno povezani le s prostorskim načrtovanjem, temveč z urejanjem prostora na splošno in s tem tudi s sistemom obdavčenja nepremičnin. Kakovost prostorskih podatkov vpliva na učinkovitost sistema obdavčenja nepremičnin, njegovo izdatnost, pravičnost in racionalnost. V članku je opredeljen metodološki pristop k analizi kakovosti prostorskih podatkovnih nizov zbirk podatkov, ki jih občine upravljajo za odmero nadomestila za uporabo stavbnega zemljišča. Za analizo kakovosti podatkov sta za raziskavo opredeljena in uporabljena prilagojena Jaccardov in Czekanowskijev koeficient, ki sta uporabna, kadar so razlike med primerjanima podatkoma manjše od 5 %. S tema koeficientoma se ugotovi raven ujemanja površin stavb in nezazidanega stavbnega zemljišča iz občinskih zbirk podatkov za odmero nadomestila za uporabo stavbnega zemljišča in iz registra nepremičnin. Na podlagi analize popolnosti, logične usklajenosti in tematske natančnosti občinskih zbirk podatkov za odmero nadomestila za uporabo stavbnega zemljišča je izvedena posodobitev občinskih zbirk podatkov. Analizirane so spremembe v občinski zbirki podatkov po posodobitvi, in sicer glede števila zavezancev za plačilo nadomestila za uporabo stavbnega zemljišča in odmere nadomestila za uporabo stavbnega zemljišča. Rezultati prve tovrstne raziskave so dobljeni na manjšem vzorcu, vendar je metodologija uporabna tudi za izvedbo analize na večjem vzorcu oziroma v vseh občinah v Sloveniji. Poleg tega je lahko v podporo strokovnjakom na občinah, prostorskim načrtovalcem in odločevalcem na področju davčne politike.

Ključne besede: urejanje prostora, prostorsko načrtovanje, kakovost prostorskih podatkov, obdavčitev nepremičnin

1 Uvod

Prostorski podatki opredeljujejo stvarni svet z različnih vidikov, pojave v prostoru neposredno ali posredno povezujejo z lokacijo in so od nekdaj temelj določanja lastnosti nepremičnin (Yomralioglu idr., 2007; Ažman, 2011). Prostorski podatki so neposredno povezani s prostorskim načrtovanjem in urejanjem prostora na splošno (Zakrajšek, 1999). Mangioni (2012), Mantey in Tagoe (2012) ter Çağdaş (2013) poudarjajo pomen uporabe prostorskih podatkov in sodobne GIS-tehnologije pri vzpostavitvi in upravljanju sistema obdavčitve nepremičnin kot dela sistema urejanja prostora. Poudarjajo, da uporaba kakovostnih prostorskih podatkov pomembno vpliva na učinkovitost sistema, njegovo izdatnost, pravičnost in racionalnost. Droj in Droj (2010) izpostavljata pomen prostorskih podatkov za dobro upravljanje in kakovostno odločanje na področju obdavčitve nepremičnin. Robbins (2014) potrjuje pozitiven vpliv uporabe prostorskih podatkov, GIS-tehnologije, prostorskih znanj ter ustrezne dostopnosti in kartografske upodobitve podatkov o nepremičninah v procesu upravljanja prostora, prostorskega načrtovanja in obdavčevanja nepremičnin (Zavodnik Lamovšek idr., 2012). Maher idr. (2005) in Robbins (2014) pri tem izpostavljajo vlogo GIS-tehnologije in (horizontalno in vertikalno) povezovanje zbirk prostorskih podatkov na lokalni in nacionalni ravni. Jankovič Grobelšek in Gajšek (2014) ob tem poudarjata, da mora učinkovita nepremičninska zakonodaja temeljiti na celovito urejenih podatkih prostorskega informacijskega sistema.

Obdavčitev nepremičnin je povezana z zahtevo po visoki kakovosti podatkov o nepremičninah. V Sloveniji in številnih državah sveta trenutno potekajo reforme sistemov obdavčitve nepremičnin. Uspešnost izvedbe teh reform je odvisna tudi od razpoložljivosti zbirk prostorskih in drugih podatkov o nepremičninah ter njihove kakovosti. Bolj ko je sistem evidentiranja nepremičnin točen in popoln, višja je raven pravne varnosti pravnih razmerij in večje je zaupanje v sistem, s tem pa tudi njegova uporabnost (Starček, 2017). Pri obravnavi prostorskih pojavov gre po navadi za kompleksen in medsektorsko prepleten sistem prostorskih podatkov, pri čemer je kakovost podatkov pomemben dejavnik kakovosti in učinkovitosti sistema, ki uporablja te podatke. Zato je treba, kot poudarja van der Molen (2002), posebno pozornost nameniti zagotavljanju kakovostnih in zaupanja vrednih prostorskih podatkov o nepremičninah, ki so med seboj povezani in usklajeni, čeprav so vodeni v več zbirkah podatkov.

Raziskava v tem članku je osredotočena na analizo vpliva kakovosti prostorskih podatkov na sistem obdavčenja nepremičnin v Sloveniji. Tovrstni sistemi se v državah po svetu stalno spreminjajo (Slack in Bird, 2014). Uspešnost reform in poznejša učinkovitost sistema obdavčitve nepremičnin pa sta odvisni tudi od kakovosti zbirk podatkov o nepremičninah. Podobno kot v številnih državah vzhodne in srednje Evrope tudi v Sloveniji že več kot dve desetletji poteka prehod iz sistema obdavčitve nepremičnin, ki temelji na površini nepremičnine (area-based), v nov sistem, ki temelji na tržni vrednosti nepremičnin (ad-valorem). V Sloveniji je zdajšnji sistem obdavčitve nepremičnin zastarel, neenoten, nepregleden in neprilagojen novim gospodarskim razmeram (Vlada RS, 2013). Zato so bile v minulih dveh desetletjih izvedene številne dejavnosti za oblikovanje sodobnega in na tržnih razmerah temelječega sistema obdavčitve nepremičnin. Prvi poskus za uvedbo novega načina obdavčitve nepremičnin je bil narejen leta 2013 s sprejetjem Zakona o davku na nepremičnine (2013), ta zakon pa je Ustavno sodišče RS (2014) v celoti razveljavilo, in sicer predvsem zaradi neskladnosti z Ustavo RS. V svoji odločitvi je med drugim izpostavilo tudi zahtevo po izboljšanju kakovosti podatkov o nepremičninah.

Reforma sistema obdavčenja nepremičnin v Sloveniji se torej izvaja, zato lahko vpliv prostorskih podatkov na učinkovitost sistema obdavčenja nepremičnin analiziramo le na podlagi podatkov, ki jih občine upravljajo za odmero nadomestila za uporabo stavbnega zemljišča (v nadaljevanju: NUSZ). NUSZ je dajatev, ki poleg davka na premoženje občanov in pristojbine za vzdrževanje gozdnih cest skupaj tvori davek na nepremičnine, v veljavi pa je že od leta 1984. NUSZ se odmerja v vseh občinah v Sloveniji. Prihodki od NUSZ so od njegove uveljavitve eden najpomembnejših in najstabilnejših javnofinančnih virov občin. Občine s prihodki od NUSZ zagotavljajo ustrezno komunalno opremljenost stavbnih zemljišč ter gospodarski in družbeni razvoj. Po podatkih Ministrstva za finance (2017) prihodki od NUSZ znašajo v povprečju skoraj 90 % vseh prihodkov od davkov od premoženja občin oziroma 15 % vseh davčnih prihodkov občin. Pravne osebe zajemajo 4 % vseh zavezancev za plačilo NUSZ. Pri tem odmera NUSZ za poslovne namene zajema 70,5 % celotne višine odmere.

Cilj raziskave je ugotoviti, ali izboljšanje kakovosti občinskih zbirk podatkov za odmero NUSZ s podatki registra nepremičnin in zbirnega katastra gospodarske javne infrastrukture prispeva k zvišanju odmere NUSZ. V raziskavi smo izhajali iz domneve (hipoteza H1), da je odsotnost zapisov o stavbah in nezazidanih stavbnih zemljiščih v občinskih zbirkah podatkov za odmero NUSZ v povprečju večja kot 10 % glede na stanje v registru nepremičnin. Predpostavili smo še (hipoteza H2), da je ujemanje podatkov o površinah stavb in nezazidanem stavbnem zemljišču med občinskimi zbirkami podatkov za odmero NUSZ in registrom nepremičnin razmeroma šibko, kar pomeni, da sta vrednosti prilagojenih Jaccardovega in Czekanowskijevega koeficienta manjši od 0,33. Predvidevali smo tudi (hipoteza H3), da posodobitev podatkovnih nizov v občinskih

zbirkah podatkov s podatki iz registra nepremičnin vpliva na povečanje števila zavezancev in višino odmere NUSZ.

2 Kakovost prostorskih podatkov in zadevne raziskave

Prostorski podatki so raznovrstni tako po položajni in časovni kakovosti kot po kakovosti pomenske opredeljenosti pojmov. Opredelitev kakovosti prostorskih podatkov je odvisna od področja obravnave, namena, zahtev in pričakovanj uporabnikov in drugih subjektivnih dejavnikov. Na splošno izraža kakovost prostorskih podatkov celotnost lastnosti zbirke podatkov glede na njeno sposobnost, da ustreza izraženemu ali vsebovanemu nizu zahtev. Je torej razlika med podatki in stvarnim svetom, ki ga podatki ponazarjajo. Večja je ta razlika, slabša je kakovost podatkov, s tem sta manjši tudi uporabna in siceršnja vrednost teh podatkov (Triglav, 2012).

Kakovost podatkov opredeljujejo tudi namen, izvor in uporaba kot opisni in kvantitativni elementi (Morrison, 1995; Veregin, 1999; Šumrada, 2005; Ivánová, 2007). Slovenski standard SIST EN ISO 19157:2015 Geografske informacije – Kakovost podatkov opredeljuje poenoteni kakovostni model za prostorske podatke in osnovno metodologijo za določanje njihove kakovosti. Kakovost podatkov je v skladu z načeli kakovosti omenjenega standarda razlika med podatkovno zbirko in med stvarnim ali hipotetičnim svetom, t. i. prostorom obravnave, določenim s podatkovnimi specifikacijami. Osnovni elementi kakovosti, kot jih opredeljuje standard, so položajna točnost, tematska natančnost, logična usklajenost, časovna kakovost, popolnost in uporabnost.

Izvedene so bile številne raziskave, povezane s področjem prostorskih podatkov o nepremičninah za njihovo vrednotenje in obdavčitev nepremičnin (Kokkonen, 2006; Tomić, 2010). Barańska (2004) je raziskovala elemente kakovosti zbirk podatkov in stohastične modele napovedovanja tržnih vrednosti nepremičnin. Barvika idr. (2013) so raziskovali povezovanje zbirk podatkov o nepremičninah s podatki množičnega vrednotenja nepremičnin za obdavčitev nepremičnin. Mangioni (2012) je raziskoval vpliv informiranosti in dostopnosti podatkov o nepremičninah na načela dobrega davčnega sistema obdavčitve nepremičnin. V številnih raziskavah je bil dan poudarek razvoju metod presoje kakovosti prostorskih podatkov (Pipino idr., 2002; McKay, 2003; Cerovski, 2010; Xia, 2012). Razviti so bili številni avtomatizirani metode in orodja za podporo presoje kakovosti podatkov (Podobnikar, 2001; Li idr., 2012) ali le izbranega elementa kakovosti (Goodchild in Hunter, 1997; Ariza-López in Mozas-Calvache, 2012; Hast, 2014; Hashemi in Abbaspour, 2015). Maggio (2012) izpostavlja pomen izboljšanja kakovosti podatkov o nepremičninah v Italiji pri odmeri občinskega davka na nepremičnine in davka na odlaganje odpadkov, pri čemer se drugonavedeni odmerja tudi glede na površino nepremičnine. Na podlagi podatkov, ki so jih predložili lastniki zemljišč in stavb, podatkov iz drugih uradnih zbirk in ortofoto posnetkov so izboljšali kakovost grafičnih in opisnih podatkov katastra stavb in zemljišč. Posledica izboljšanja popolnosti zbirk podatkov o nepremičninah sta bila povečanje prihodkov od omenjenih davkov in več zaznanih nezakonitih gradenj.

Caeiro idr. (2016) poudarjajo učinek izboljšanja kakovosti podatkov katastra nepremičnin na Portugalskem na vrednotenje nepremičnin in odmero davka na nepremičnine. Na območju Lizbone so z aktivnim vključevanjem latnikov nepremičnin, zajemom podatkov o lastništvu nepremičnin in terenskimi geodetskimi izmerami izboljšali popolnost, tematsko natančnost, logično usklajenost in položajno točnost podatkov o nepremičninah. Izboljšanje kakovosti podatkov o nepremičninah je pomembno vplivalo tudi na urejenost lastniških razmerij in uporabnost podatkov tudi za druge namene. Popolnost zbirk podatkov o zemljiščih in stavbah, ki pomembno vpliva na prihodke od obdavčitve nepremičnin, je v državah Evropske unije različna. Po podatkih Organizacije združenih narodov (Združeni narodi, 2014) je v državah Evropske unije evidentiranih več kot 80 % vseh zemljišč. Največji delež je v srednjeevropskih in skandinavskih državah. V Armeniji je večina neevidentiranih zemljišč v lasti države. Na Malti ugotovitve kažejo, da je delež evidentiranih zemljišč večji na urbanih območjih. V Španiji sta približno 2 % neevidentiranih zemljišč, ki so večinoma na podeželju.

Slovenija je v letih po osamosvojitvi vložila precejšnja sredstva v razvoj in vzpostavitev različnih zbirk podatkov o prostoru. Kot navaja Petrovič (2006), so se te vzpostavljale hitro, a pogosto brez zadostnega in ustreznega zagotavljanja kakovosti. V Sloveniji so izvedene številne študije kakovosti posameznih zbirk prostorskih podatkov. Geodetski inštitut Slovenije (2003) je ugotovil, da je približno četrtina podatkov zemljiškega katastra slabe ali zelo slabe kakovosti, predvsem na ruralnih območjih in območjih manj intenzivne rabe. Ferlan (2005), Čeh idr. (2011), Ferlan idr. (2011) in Bohak (2016) so poudarili, da je zbirka digitalnih katastrskih načrtov neusklajena, in opozorili na različne položajne točnosti. Pogost predmet raziskav sta tudi kataster stavb (Geodetski inštitut Slovenije, 2015; Triglav Čekada idr., 2016) in register nepremičnin (Lisec idr., 2015; Mitrović, 2015; Požun, 2015; Starček, 2017). Smodiš (2011) je poudaril, da je kakovost določanja posplošene tržne vrednosti nepremičnin odvisna tudi od kakovosti podatkov o nepremičninah v registru nepremičnin. Mitrović (2015) je opozoril na nizko raven kakovosti podatkov, ki jih v evidenco trga nepremičnin predložijo zavezanci.

Kobetič (2014) je glede prostorskih podatkov ugotovil, da podatkov, potrebnih za odmero NUSZ, ni, podatki niso vodeni v ustrezni obliki ali so podatki slabo vzdrževani. Grilc (2017) in Ziherl (2017) sta ugotovila, da je posodobitev zbirke podatkov mestne občine Kranj s podatki iz registra nepremičnin vplivala med drugim na povečanje števila zavezancev in posledično prihodkov od NUSZ. Grilc (2017) za učinkovito izboljšanje kakovosti podatkov izpostavlja tudi pomen javne razgrnitve podatkov o nepremičninah ter sodelovanje lastnikov nepremičnin in strokovnjakov s področja prostorskih podatkov. Gerčer (2017) je posebej opozoril na odstopanja med podatki o površini stavbnih zemljišč v občinskih zbirkah podatkov za odmero NUSZ in podatki iz registra nepremičnin. Mivšek in Radovanova (2017) sta izpostavila, da raznovrstna kakovost podatkov vpliva na nepravilnosti pri odmeri NUSZ. Urankarjeva (2016) je menila, da je zaradi nepopolnosti občinskih zbirk podatkov za od 20 % do 30 % manjši prihodek od NUSZ. Finančna uprava RS (2014) navaja, da zavezanci za plačilo NUSZ občin ne obveščajo sproti o spremembah, ki vplivajo na odmero NUSZ. Režek idr. (2015) ob tem izpostavljajo, da lahko množica ponudnikov zbirk prostorskih podatkov in sodobne tehnologije za njihovo pridobivanje povzročijo nekritičnost pri uporabi prostorskih podatkov. Zato so lahko rešitve, predlogi in ukrepi, ki temeljijo na takih podatkih, dvomljive kakovosti. Vse navedeno kaže na pomembnost zagotavljanja kakovostnih prostorskih podatkov.

3 Zbirke podatkov za obdavčitev nepremičnin v Sloveniji

Predmet obdavčitve pri NUSZ sta zazidano in nezazidano stavbno zemljišče. Med zazidana stavbna zemljišča se uvrščajo površine za stanovanjski in poslovni namen. Davčno osnovo tvori površina nezazidanega stavbnega zemljišča, stanovanjska površina oziroma poslovna površina. Občine površine zemljišča, stanovanj in stavb za poslovni namen določajo na različne načine. Z odlokom o NUSZ določijo merila in število točk glede na lastnosti stavbnega zemljišča in njegovih prednosti ali slabosti. Zakon o stavbnih zemljiščih (1984; 1997) ni določal vseh meril za predpisovanje NUSZ, zaradi česar lahko občine merila in število točk pogosto določajo arbitrarno. Pri tem imajo vzpostavljene lastne zbirke podatkov za odmero NUSZ, ki se po večini, kot navaja Kobetič (2014), ne povezujejo z referenčnimi zbirkami podatkov (zemljiški kataster, kataster stavb in register nepremičnin). To, kot poudarjajo Grote idr. (2015), pomembno vpliva na neracionalnost in nepreglednost sistema obdavčitve nepremičnin v Sloveniji. Šele Zakon o graditvi objektov (2004) je določil obveznost uporabe uradnih zbirk podatkov (zemljiški kataster, kataster stavb in register nepremičnin) pri upravljanju sistema NUSZ, kar pa vse občine ne upoštevajo.

Podatki, potrebni za upravljanje sistema NUSZ, se med občinami razlikujejo in so odvisni od določil odloka oziroma meril. Občine med merili upoštevajo predvsem lego v prostoru, opremljenost s komunalno infrastrukturo, funkcionalno ugodnost lokacije stavbnega zemljišča, namensko rabo po prostorsko izvedbenih aktih, gostoto javnih funkcij in poslovnih dejavnosti ter stalne čezmerne motnje pri uporabi stavbnega zemljišča. Nekatere občine upoštevajo še konfiguracijo terena, zasedenost stavb in zemljišč, število lastnih parkirnih mest, dostopnost z javnimi prometnimi sredstvi, motnje pri uporabi stavbnega zemljišča, zapuščenost in dotrajanost objekta idr. Kataster stavb, zemljiški kataster in register nepremičnin ne vsebujejo vseh podatkov, ki jih občine potrebujejo za določitev števila točk in določitev davčnega bremena z NUSZ. Občine zato ob podatkih iz referenčnih zbirk prostorskih podatkov pridobivajo podatke še iz grafičnega dela zemljiškega katastra, digitalnih podlag veljavnih prostorskih sestavin dolgoročnega in srednjeročnega družbenega plana ter iz drugih virov.

Podatki o nepremičninah se v Sloveniji vodijo v več referenčnih zbirkah podatkov, ki se uporabljajo za obdavčitev nepremičnin, in sicer v zemljiškem katastru, katastru stavb, zemljiški knjigi, zbirnem katastru gospodarske javne infrastrukture, registru nepremičnin, zbirki vrednotenja nepremičnin, evidenci trga nepremičnin, registru prostorskih enot in zbirki topografskih in kartografskih podatkov. V katastrih so podatki o predmetu pravic in pravnih razmerij, ki so evidentirani v zemljiški knjigi. Za podatke o nepremičninah kot o predmetu pravic je kataster izvorna evidenca. Register nepremičnin je javna evidenca o vseh nepremičninah, ki v evidenčnem smislu vzpostavlja nepremičnino. Določen je kot odprt sistem, ki omogoča, da uporabniki s svojimi predpisi v skladu s svojimi nameni dopolnjujejo njegovo večnamenskost tako, da določijo dodatne podatke, ki se vodijo o nepremičninah (Geodetska uprava RS, 2013). Register nepremičnin kot podatkovna zbirka že sam po sebi ni popoln zaradi nepopolnosti evidenc, iz katerih prevzema podatke, in je omejene kakovosti, k čemur sta največ prispevala neustrezno izvedeni popis nepremičnin in predpisani način spreminjanja podatkov. Kljub temu menimo, da je kakovostnejša podatkovna zbirka kot podatkovna zbirka za odmero NUSZ. To sledi tudi iz sistemskih priporočil za izboljšanje sistema NUSZ (Ministrstvo za okolje in prostor idr., 2016).

4 Empirična raziskava kakovosti občinske zbirke podatkov za odmero NUSZ

4.1 Metodologija

V raziskavi smo podatkovne nize o stavbah za stanovanjski in poslovni namen in nezazidanih stavbnih zemljiščih, ki jih ob-

čine vodijo v zbirkah podatkov za odmero NUSZ, primerjali s podatkovnimi nizi registra nepremičnin kot referenčne zbirke podatkov. Najprej smo analizirali odloke za odmero NUSZ v izbranih občinah. Pridobili smo podatke za devet občin, ki so pristopile k projektu posodobitve zbirke podatkov za odmero NUSZ in od katerih smo lahko pridobili tudi ustrezne podatke za izvedbo navedene analize. Analizirali smo vrsto in vire podatkov, ki jih občine uporabljajo za odmero NUSZ. Pri analizi kakovosti tovrstnih podatkovnih nizov smo se osredotočili na tri osnovne elemente kakovosti, kot jih opredeljuje standard ISO 19157:2015, in sicer popolnost, tematsko natančnost in logično usklajenost občinskih zbirk podatkov.

Za vse obravnavane občine smo potem izračunali ujemanje podatkov o številu delov stavbe in ujemanje podatkov o površini stavbe v občinskih zbirkah podatkov za odmero NUSZ s podatki iz registra nepremičnin. Znanih je več metod določanja podobnosti med množicami (Romesburg, 2004; Albatineh in Niewiadomska-Bugaj, 2011; Liu idr., 2014; Aamir in Bhusry, 2015). V raziskavi smo za izračun ujemanja podatkov o številu delov stavbe med obravnavanima podatkovnima zbirkama uporabili Jaccardov koeficient, ki se pogosto uporablja za ugotavljanje podobnosti med množicami (Lee, 2017; Nowak Da Costa, 2015). Jaccardov koeficient J, s katerim izračunamo podobnost med dvema podatkovnima nizoma A in B, izračunamo, kot sledi (Jaccard, 1901):

$$J(A,B) = \frac{|A \cap B|}{|A \cup B|} \in [0,1]. \quad (1)$$

Pri proučevanju podobnosti med podatkovnima nizoma se pogosto uporablja tudi Czekanowskijev koeficient C (Wierzchoń in Kłopotek, 2018), ki ga med podatkovnima nizoma A in B izračunamo, kot sledi (Czekanowski, 1913):

$$C(A,B) = \frac{2|A \cap B|}{|A| + |B|} \in [0,1]. \quad (2)$$

Oba navedena koeficienta natančno merita ujemanje podatkov v dveh podatkovnih nizih. V raziskavi take natančnosti ne potrebujemo niti ni smiselna. Zato smo ugotavljali ujemanje podatka o površini stavbe v občinski zbirki podatkov za odmero NUSZ in podatkov v registru nepremičnin tako, da smo kot ujemajoča podatka opredelili podatka, katerih vrednosti za površino se razlikujeta do 5 %, česar osnovna koeficienta ne štejeta za ujemanje. Zato smo morali uporabiti prilagojen Jaccardov koeficient ujemanja J_p in prilagojen Czekanowskijev koeficient ujemanja C_p, ki smo ju za namene raziskave opredelili in izračunali po enačbi:

$$J_p = \frac{\sum_{i=1}^{n} S_{NUSZ\_u(i)}}{\sum_{i=1}^{n} S_{NUSZ(i)} + \sum_{i=1}^{n} S_{REN(i)} - \sum_{i=1}^{n} S_{NUSZ\_u(i)}} \quad (3)$$

$$C_p = \frac{2 \cdot \sum_{i=1}^{n} S_{NUSZ\_u(i)}}{\sum_{i=1}^{n} S_{NUSZ(i)} + \sum_{i=1}^{n} S_{REN(i)}} \quad (4)$$

pri čemer je:

$$S_{NUZS\ u(i)} = \begin{cases} S_{NUZS(i)}, & \text{če je } |S_{NUZS(i)} - S_{REN(i)}| \leq 0{,}05 \cdot S_{REN(i)}, \\ 0, & \text{sicer.} \end{cases} \quad (5)$$

Pri tem je $S_{NUSZ(i)}$ podatek o površini stavbe i v občinski zbirki podatkov za odmero NUSZ in $S_{REN(i)}$ podatek o površini stavbe i v registru nepremičnin. Obravnava ujemanja podatkov o površinah stavb in številu delov stavb med občinsko zbirko podatkov za odmero NUSZ in registrom nepremičnin je pomembna zaradi presoje kakovosti občinske zbirke podatkov za odmero NUSZ glede na referenčno zbirko podatkov. Rezultati analize ujemanja so izhodišče morebitnih ukrepov za izboljšanje kakovosti podatkov in posodobitev sistema obdavčitve nepremičnin.

V nadaljevanju raziskave je bila izvedena posodobitev podatkov občin za odmero NUSZ s podatki iz registra nepremičnin in zbirnega katastra gospodarske javne infrastrukture. Posodobitev podatkov občin za odmero NUSZ je bila izvedena za podatke o površini, dejanski rabi in opremljenosti s komunalno infrastrukturo. Po posodobitvi podatkov so bile vrednosti primerjanih nizov podatkov v obravnavanih zbirkah enake.

Občinske zbirke podatkov za odmero NUSZ so se s posodobitvijo spremenile. Pred posodobitvijo so vsebovale zapise za posamezni stavbni ali lastniški del, po posodobitvi podatkov vsebujejo podatek o stavbi ali nezazidanem stavbnem zemljišču kot celoti. Zaradi tega se je zmanjšalo število zapisov v občinski zbirki podatkov za odmero NUSZ. Med občinami ni enotnega pristopa za določitev davčne osnove pri določitvi višine NUSZ, tj. površine stavb. Občine v odlokih za odmero NUSZ stanovanjsko oziroma poslovno površino določajo na različne načine, npr. kot fundus stavbe, dejansko površino, tlorisno površino, neto tlorisno površino, čisto tlorisno

Preglednica 1: Osnovni podatki o obravnavanih občinah

Občina	Površina občine (v km^2)	Št. prebivalcev (1. polletje 2017)	Št. hišnih številk (leto 2017)	Odmera NUSZ glede na vse prihodke od obdavčitve nepremičnin 2017 (v %)
Črnomelj	339,7	14.365	4.876	92,3
Divača	145,1	4.000	1.423	98,6
Dornava	28,4	2.226	974	99,6
Duplek	40,0	6.803	2.265	93,5
Mokronog - Trebelno	73,4	3.045	1.519	94,9
Sodražica	49,5	2.184	867	90,8
Središče ob Dravi	32,7	2.019	757	96,2
Vuzenica	50,1	2.670	770	98,6
Zreče	67,0	6.409	1.897	93,9

Vir: Statistični urad RS (2017) in Ministrstvo za finance (2018)

površino, uporabno površino idr. Pri posodobitvi občinskih zbirk podatkov za odmero NUSZ je bil uporabljen podatek iz registra nepremičnin o neto tlorisni površini dela stavbe. To je površina vseh prostorov dela stavbe ne glede na dejansko možnost uporabe prostorov. Ta površina dela stavbe, ki leži v več etažah, je vsota površin prostorov tega dela stavbe v vseh etažah (Geodetska uprava RS, 2010).

4.2 Izbrane občine in uporabljeni podatki

V raziskavo je bilo zajetih devet občin, ki so pristopile k projektu posodobitve zbirke podatkov za odmero NUSZ, in sicer Dornava, Duplek, Sodražica, Črnomelj, Divača, Vuzenica, Središče ob Dravi, Mokronog - Trebelno in Zreče. Preglednica 1 podaja osnovne podatke o obravnavanih občinah. Iz podatkov v preglednici 1 izhaja, da prihodki od NUSZ v obravnavanih občinah tvorijo izjemno velik delež vseh prihodkov od obdavčitve nepremičnin (v vseh občinah več kot 90 %). Obravnavane občine so fizičnim osebam odmerjale v povprečju višji NUSZ, kot je bilo povprečje v Sloveniji, ter v povprečju nižji NUSZ na m^2 od nacionalnega povprečja za pravne osebe (razen v občini Duplek).

V raziskavi so bili uporabljeni:

- demografski podatki občin za leti 2015 in 2016 (vir: Statistični urad Republike Slovenije);
- podatki o odmeri NUSZ in davčnih prihodkih občin za leta 2015, 2016 in 2017 (vir: Ministrstvo za finance in Finančna uprava RS);
- podatki iz registra nepremičnin, meje občin, površine občin, podatki iz zbirnega katastra gospodarske javne infrastrukture (vir: Geodetska uprava RS);
- podatki in odloki o NUSZ (vir: odloki občin in zbirke podatkov občin).

4.3 Značilnosti sistema NUSZ v obravnavanih občinah

Vse obravnavane občine, razen Središča ob Dravi, so imele v času izvedbe raziskave sprejet odlok o NUSZ. Občina Središče ob Dravi je uporabljala odlok sosednje občine Ormož. Občine so odloke sprejemale v različnih obdobjih in nimajo enotno urejenega področja odmere NUSZ. To pomeni, da je lahko višina NUSZ za primerljiva zemljišča in stavbe v obravnavanih občinah precej različna. Vse obravnavane občine imajo v odloku opredeljeno, da odmerjajo NUSZ od zazidanega in nezazidanega stavbnega zemljišča. Izmed obravnavanih so le občine Črnomelj, Divača, Vuzenica in Zreče dejansko odmerjale NUSZ tudi od nezazidanega stavbnega zemljišča. Preglednica 2 prikazuje osnovne elemente odlokov o NUSZ v obravnavanih občinah.

Kot prikazuje preglednica 2, občine po večini upoštevajo minimalni obseg meril, opredeljenih v Zakonu o stavbnih zemljiščih (1984; 1997), tj. opremljenost stavbnega zemljišča s komunalnimi napravami in objekti, lokacijo in namembnost ter izjemne ugodnosti v zvezi s pridobivanjem dohodka v gospodarskih dejavnostih. Občine arbitrarno upoštevajo še druga merila, ki se med njimi razlikujejo. Ob tem za določitev površine stavbnega zemljišča uporabljajo različne vire podatkov (preglednica 3), pri čemer večinoma temeljijo na podatkih, ki jih občinski upravi predložijo zavezanci za plačilo NUSZ.

Preglednica 2: Število con in merila odlokov občin za določitev višine NUSZ

Število con in merila odloka o NUSZ	Črnomelj	Divača	Dornava	Duplek	Mokronog - Trebelno	Sodražica	Središče ob Dravi	Vuzenica	Zreče
Število con	4	2	2	3	3	4	4	2	3
Lokacija	•	•	•	•	•	•	•	•	•
Opremljenost s komunalnimi napravami in objekti		•	•	•	•	•	•	•	•
Namembnost	•	•	•	•	•		•		•
Izjemna ugodnost lokacije		•		•	•		•	•	•
Nezasedenost stavb oziroma zemljišč	•	•			•		•		
Nenamenska uporaba	•				•		•		
Motnje pri uporabi				•	•			•	
Smotrnost izkoriščenosti					•				
Možnost intenzivnejše rabe komunalnih in drugih objektov in naprav					•				
Zapuščenost stavb oziroma zemljišč							•		
Dotrajanost stavb							•		

Vir: Odloki občin o NUSZ, lastna analiza

Preglednica 3: Viri podatkov za določitev površine zazidanega stavbnega zemljišča za stanovanjski in poslovni namen

Občina	Vir podatkov
Črnomelj	Register nepremičnin, kataster stavb in zemljiški kataster
Dornava, Duplek, Mokronog - Trebelno, Sodražica	Zbirka podatkov občine
Divača, Središče ob Dravi	Podatki uradnih evidenc in podatki, ki jih občinski upravi sporočijo zavezanci
Vuzenica, Zreče	Podatki neposrednega uporabnika stavbnega zemljišča, zbirka podatkov o izdanih gradbenih dovoljenjih in druge uradne evidence

Vir: Odloki občin o NUSZ

Preglednica 4: Število zapisov v občinskih zbirkah podatkov pred posodobitvijo in po njej ter število stavb in nezazidanih stavbnih zemljišč glede na stanje v registru nepremičnin

	Število vseh zapisov v občinski zbirki podatkov		Delež stavb in nezazidanih stavbnih zemljišč (glede na število vseh po posodobitvi), ki	
Občina	pred posodobitvijo	po posodobitvi	jih ni v občinski zbirki podatkov in so v registru nepremičnin	so v občinski zbirki podatkov in jih ni v registru nepremičnin
Črnomelj	13.179	6.300	67 (1,1 %)	4 (0,1 %)
Divača	3.021	1.788	3 (0,2 %)	18 (1 %)
Dornava	2.006	1.221	23 (1,9 %)	10 (0,8 %)
Duplek	4.542	2.766	55 (2 %)	9 (0,3 %)
Mokronog - Trebelno	3.862	1.991	6 (0,3 %)	3 (0,2 %)
Sodražica	1.871	1.010	7 (0,7 %)	2 (0,2 %)
Središče ob Dravi	1.669	1.019	23 (2,3 %)	92 (9 %)
Vuzenica	1.694	1.010	11 (1,1 %)	9 (0,9 %)
Zreče	3.815	2.301	14 (0,6 %)	24 (1 %)

Vir: zbirke podatkov občin o NUSZ, register nepremičnin, lastna analiza

V nadaljevanju so navedeni rezultati analize kakovosti občinskih zbirk podatkov po izbranih elementih kakovosti.

4.4 Popolnost občinskih zbirk podatkov

Popolnost je po standardu SIST EN ISO 19157:2015 primernost uporabniškega podatkovnega modela, prisotnost in odsotnost objektov, atributov in relacij ter ima lahko dva podelementa: izostanek vrednosti ali nadštevilne vrednosti. Popolnost se lahko nanaša na celovitost podatkovnega modela (modelna popolnost), popolnost atributov objektnega tipa (atributna popolnost) ali odsotnost oziroma nadštevilnost podatkovnih vrednosti v atributih prisotnih objektov (podatkovna popolnost) (Šumrada, 2015). V raziskavi smo analizirali popolnost občinskih zbirk podatkov za odmero NUSZ, ki je opredeljena z razmerjem med številom stavb in nezazidanih stavbnih zemljišč v zbirki podatkov in registrom nepremičnin. Tako smo ugotavljali pomanjkljive in/ali nadštevilne podatkovne vrednosti v zbirki podatkov ali podatkovnem nizu.

V vseh občinah je bila ugotovljena različna raven popolnosti zbirke podatkov. Podatki v preglednici 4 kažejo, da je v obravnavanih občinskih zbirkah podatkov za odmero NUSZ v povprečju odsoten 1,1 % zapisov o stavbah in nezazidanih stavbnih zemljiščih glede na podatke registra nepremičnin. V obravnavanih občinah je povprečno 1,5 % zapisov o stavbah in nezazidanih stavbnih zemljiščih, ki so v občinskih zbirkah podatkov za odmero NUSZ in jih ni v registru nepremičnin. Ugotovili smo, da se je v občinskih zbirkah podatkov za stavbo ali nezazidano stavbno zemljišče vodilo tudi več zapisov, odvisno od števila delov stavbe ali od števila lastniških deležev na nepremičnini. Analiza popolnosti atributnih podatkov, pripisanih posamezni stavbi ali nezazidanemu stavbnemu zemljišču v občinskih zbirkah podatkov za odmero NUSZ, je pokazala na pogosto odsotnost podatkov o številu točk po posameznih merilih odloka. V številnih primerih je bilo pripisano le skupno število točk.

4.5 Tematska natančnost občinskih zbirk podatkov za odmero NUSZ

Tematska natančnost podaja zanesljivost razvrstitve vrednosti, ki so pripisane osnovnim elementom podatkov kot atributi in ima lahko, glede na določila standarda SIST EN ISO 19157:2015, tri podelemente: pravilnost razvrstitve podatkov, kvantitativno pravilnost vrednosti opisnih atributov in kvantitativno točnost. V raziskavi smo se osredotočili na primerjavo točnosti podatka o površini stavbe in nezazidanega stavbnega zemljišča v občinskih zbirkah podatkov za odmero NUSZ glede na podatek v registru nepremičnin. Ob vzpostavitvi občinskih zbirk podatkov v 90. letih prejšnjega stoletja je bil v večini primerov v veljavi pojem koristne površine (s korekcijskimi faktorji za različne prostore), zato je v registru nepremičnin uporabljena neto tlorisna površina praviloma večja od koristne površine.

Podatki v preglednici 5 kažejo, da se podatki o številu delov stavb med občinskimi zbirkami podatkov za odmero NUSZ in registrom nepremičnin razmeroma dobro ujemajo (povprečna vrednost Jaccardovega koeficienta $J = 0{,}87$). Med obravnavanimi občinami so manjše razlike. Nekoliko drugačne rezultate dobimo pri analizi površine stavb in nezazidanega stavbnega zemljišča. Če upoštevamo predpostavljeno mejo za prilagojena Jaccardov in Czekanowskijev koeficient 0,33 (vrednosti pod to mejo označujejo večje odstopanje podatkov), potem je največje odstopanje podatkov o površini stavb in nezazidanega stavbnega zemljišča med občinsko zbirko podatkov in registrom nepremičnin v občini Mokronog – Trebelno ($J_p = 0{,}15$ in $C_p = 0{,}27$) in občini Dornava ($J_p = 0{,}31$ in $C_p = 0{,}47$). V drugih obravnavanih občinah se J_p giblje med 0,41 in 0,73, C_p pa med 0,58 in 0,85. Temu ustrezen je tudi rezultat glede povprečnega odstopanja in razlik v površinah za več kot 50 %. Poprečno odstopanje površin stavb in nezazidanega stavbnega zemljišča med občinsko zbirko za odmero NUSZ in registrom nepremičnin znaša od 18 m^2 v občini Sodražica do 511 m^2 v občini Mokronog -Trebelno. Delež stavb in nezazidanih stavbnih zemljišč v občinski zbirki podatkov za odmero NUSZ, katerih površina za več kot 50 % odstopa od površine v registru nepremičnin, se giblje med 1,01 % v občini Duplek do 9,83 % v občini Dornava.

4.6 Logična usklajenost podatkov iz občinskih zbirk podatkov

Logična usklajenost se nanaša na pojmovne (semantika), formatne (zapis), domenske (obseg vrednosti) in oblikovne protislovnosti v zbirki podatkov. Logična usklajenost podaja skladnost pojmovnih pravil podatkovnega modela in strukture podatkov v podatkovnem nizu (sestave razredov, atributov in relacij med njimi) (Šumrada, 2015). Pri analizi logične usklajenosti podatkov občinskih zbirk podatkov za odmero NUSZ je ugotovljeno, da je bilo v občinskih zbirkah podatkov za stavbo ali nezazidano stavbno zemljišče več zapisov. Zaznanih je bilo veliko primerov neusklajenosti podatkov o rabi stavbe ali dela stavbe, nekateri zapisi o stavbi ali nezazidanem stavbnem zemljišču so bili v registru nepremičnin in jih ni bilo v občinski zbirki podatkov ali nasprotno. Poleg tega je bila v več primerih ugotovljena odsotnost podatka o hišni številki. Kot že omenjeno, površina dela stavbe v občinski zbirki podatkov za odmero NUSZ ni enaka površini dela stavbe v registru nepremičnin. Glede na to, da občine v odlokih o NUSZ upoštevajo različna merila, je težko izvesti primerjalno analizo.

Preglednica 5: Ujemanje podatkov o številu delov stavb ter površini stavb in nezazidanega stavbnega zemljišča med občinsko zbirko podatkov za odmero NUSZ in registrom nepremičnin

	Število delov stavbe	Površina stavb in nezazidanega stavbnega zemljišča			
Občina	Jaccardov koeficient J	Prilagojen Jaccardov koeficient J_p	Prilagojen Czekanowskijev koeficient C_p	Povprečno odstopanje [(a)] (v m^2)	Razlika površine več kot 50 % [(b)] (v %)
Črnomelj	0,86	0,51	0,68	91	2,46
Divača	0,83	0,50	0,66	117	5,31
Dornava	0,80	0,31	0,47	59	9,83
Duplek	0,93	0,73	0,85	18	1,01
Mokronog - Trebelno	0,84	0,15	0,27	511	8,49
Sodražica	0,92	0,65	0,79	28	2,57
Središče ob Dravi	0,83	0,55	0,71	36	4,91
Vuzenica	0,92	0,41	0,58	138	1,88
Zreče	0,94	0,54	0,71	140	1,35

Vir: lastni izračun

Opomba: [(a)] Povprečno odstopanje površin stavb in nezazidanega stavbnega zemljišča med občinsko zbirko podatkov in registrom nepremičnin. [(b)] Delež stavb in nezazidanih stavbnih zemljišč v občinski zbirki podatkov za odmero NUSZ, katerih površina za več kot 50 % odstopa od površine v registru nepremičnin.

Preglednica 6: Podatki o odmeri NUSZ pred posodobitvijo občinskih zbirk podatkov za odmero NUSZ in po njej

	Podatki o NUSZ pred posodobitvijo					Podatki o NUSZ po posodobitvi					
	Pravne osebe		Fizične osebe			Pravne osebe		Fizične osebe			
Občina	Št. odločb	Odmera (v EUR)	Št. odločb	Odmera (v EUR)	Odmera skupaj (v EUR)	Št. odločb	Odmera (v EUR)	Št. odločb	Odmera (v EUR)	Odmera skupaj (v EUR)	Indeks odmere pred/po
Črnomelj	202	191.764	4.794	196.476	388.239	210	278.696	5.743	327.739	606.435	156
Divača	47	137.011	1.220	60.664	197.675	77	164.465	1.755	96.315	260.780	132
Dornava	12	5.668	801	57.475	63.143	17	19.732	1.073	86.290	106.022	168
Duplek	28	27.534	1.940	136.914	164.448	40	33.346	2.620	230.471	263.817	160
Mokronog - Trebelno	29	30.420	1.291	70.268	100.688	30	33.596	1.402	82.049	115.645	115
Sodražica	27	7.928	702	25.272	33.200	27	10.956	931	45.089	56.045	169
Središče ob Dravi	17	27.030	824	104.410	131.440	26	39.386	913	115.139	154.525	118
Vuzenica	24	131.546	579	25.924	157.470	34	126.595	1.143	50.532	177.128	112
Zreče	138	323.663	2.155	164.030	487.693	164	332.487	2.332	195.407	527.893	108

Vir: Ministrstvo za finance, 2017; lastni izračun

4.7 Učinki posodobitve občinskih zbirk podatkov na odmero NUSZ

Osrednji namen raziskave je bil ugotoviti, ali posodobitev občinske zbirke podatkov za odmero NUSZ o zazidanih in nezazidanih stavbnih zemljiščih v izbranih občinah s podatki iz registra nepremičnin pozitivno vpliva na višino odmere NUSZ. Oziroma ali se je z izboljšanjem kakovosti podatkov zvišala odmera NUSZ v obravnavanih občinah. Rezultati v preglednici 6 kažejo, da je uporaba podatkov iz registra nepremičnin pozitivno vplivala na višino odmere NUSZ v vseh obravnavanih občinah.

Število zavezancev za plačilo NUSZ, tako pravnih kot fizičnih oseb, se je po posodobitvi občinskih zbirk podatkov v vseh občinah povečalo v povprečju za približno 30 %. V obravnava-

nih občinah je odmera NUSZ po posodobitvi občinskih zbirk podatkov v povprečju višja za 38 % glede na odmero NUSZ pred posodobitvijo. V občini Duplek se je odmera NUSZ po posodobitvi podatkov povečala za 60 %, v občini Dornava za 68 %, v občini Sodražica pa za kar 69 %. Večje ko je povprečno odstopanje površine stavbe in nezazidanega stavbnega zemljišča med občinsko zbirko podatkov za odmero NUSZ in registrom nepremičnin, manj se zviša odmera NUSZ po posodobitvi podatkov. V vseh občinah je po izvedeni posodobitvi podatkov zaznano razmeroma visoko zvišanje odmere NUSZ glede na vse davčne prihodke občine (povprečno povečanje znaša d_{prih} = 51,3 %).

5 Sklep

V raziskavi smo v izbranih občinah analizirali kakovost zbirk podatkov, ki jih občine v Sloveniji uporabljajo za upravljanje sistema NUSZ. Rezultati kažejo, da obravnavane občine za upravljanje sistema NUSZ vodijo lastne zbirke podatkov. Te zbirke so bile večinoma vzpostavljene v 90. letih prejšnjega stoletja na podlagi popisa nepremičnin oziroma na podlagi podatkov, ki so jih sporočili zavezanci za plačilo NUSZ. Občinske zbirke podatkov za odmero NUSZ so vzdrževane predvsem na zahtevo zavezancev za plačilo NUSZ, ob spremembah lastništva, na podlagi zahtev davčnega organa ali sodišč. Obravnavane občine so pred izvedeno posodobitvijo zbirk podatkov te večinoma vodile v preglednicah, brez podpore GIS-tehnologije in kartografskih prikazov stanja nepremičnin v prostoru. Med obravnavanimi ima le občina Črnomelj v odloku o NUSZ navedeno, da se za določitev površine zazidanega stavbnega zemljišča in dejanske rabe uporabljajo podatki iz registra nepremičnin, katastra stavb in zemljiškega katastra. Zaradi odsotnosti enotnega identifikatorja stavbe in dela stavbe je bil v raziskavi zaznan tudi problem povezovanja občinskih zbirk podatkov za odmero NUSZ z registrom nepremičnin.

V okviru raziskave je bilo za obravnavane občine ugotovljeno, da je kakovost občinskih zbirk podatkov za odmero NUSZ raznovrstna po vseh obravnavanih elementih kakovosti: popolnosti, logične usklajenosti in tematske natančnosti. Ugotovitve raziskave kažejo, da je v občinskih zbirkah podatkov za odmero NUSZ zajeta večina stavb, delov stavb in nezazidanih stavbnih zemljišč, ki so zajeti v registru nepremičnin in so predmet odmere NUSZ, s čimer hipotezo H1 zavrnemo. Nadštevnih stavb, delov stavb in stavbnih zemljišč (so zajeti v občinski zbirki podatkov za odmero NUSZ in jih v registru nepremičnin ni) je bilo razmeroma malo, razen v občini Središče ob Dravi (9 % vseh zapisov). Ugotovili smo pogosto odsotnost atributnih podatkov, predvsem števila točk po posameznem merilu iz odloka o NUSZ. Z Jaccardovim koeficientom J_p smo ugotovili razmeroma visoko raven ujemanja števila delov stavbe v občinskih zbirkah podatkov in v registru nepremičnin. Potrdili smo uporabnost prilagojenega Jaccardovega koeficienta J_p in prilagojenega Czekanowskijevega koeficienta C_p. Ujemanje podatkov ob upoštevanju vsaj 5-odstotnega odstopanja vrednosti je sprejemljiva mera, glede na to, da so podatki o površini nepremičnin pridobljeni z različnimi metodami v različnih obdobjih. Sprejemljiva je tudi z vidika racionalnosti, ker se postopki posodobitve ne izvedejo, če so odstopanja manjša od 5 %. Z J_p in C_p smo potrdili razmeroma nizko raven ujemanja podatkov o površinah stavb in nezazidanega stavbnega zemljišča med občinskimi zbirkami podatkov za odmero NUSZ in registrom nepremičnin. S tem smo potrdili hipotezo H2. Izrazitejša je tudi logična neusklajenost podatkov med občinskimi zbirkami podatkov za odmero NUSZ in registrom nepremičnin. Potrdili smo hipotezo H3, da posodobitev podatkovnih nizov v občinskih zbirkah podatkov s podatki registra nepremičnin pomembno vpliva na povečanje števila zavezancev in višino odmere NUSZ (v obravnavanih občinah povprečno za 38 %, v nekaterih od njih celo za več kot 60 %). Uporabnost navedene metodologije se potrjuje tudi s primerjavo rezultatov. Rezultati raziskave, izvedene z navedeno metodo, so glede na vrsto in obseg neskladnosti med občinskimi zbirkami podatkov za NUSZ in registrom nepremičnin ter glede na odstotek povišanja odmere NUSZ po izvedenem procesu izboljšanja kakovosti podatkov zelo podobni rezultatom raziskav Geršerja (2017), Grilca (2017) in Ziherla (2017).

Neustrezna kakovost prostorskih podatkov, ki jih občine uporabljajo za odmero NUSZ, ima lahko večrazsežne posledice. Neposredno vpliva na povečanje števila pritožb zoper odločbe o odmeri NUSZ. Poveča se verjetnost kršitve načel sodobnega davčnega sistema in ustavnih načel, predvsem zakonitosti in enakosti pred zakonom. Zbirke podatkov občin, ki jih občine vodijo za odmero NUSZ, se stalno spreminjajo. To terja ustrezne pristope upravljanja, temelječe na sodobni GIS-tehnologiji. Ob referenčnih zbirkah podatkov so na voljo tudi številni drugi podatkovni viri (npr. Google Map, Open Street Map in druge prostovoljno zbrane zbirke prostorskih podatkov), s katerimi je mogoče primerjati kakovost izbranih podatkovnih nizov v občinskih zbirkah podatkov za odmero NUSZ. Navedena metoda je uporabna predvsem, kadar je v med seboj primerjanih zbirkah podatkov vzpostavljen enoten identifikator nepremičnine.

Tovrstno raziskavo bi bilo smiselno izvesti v vseh občinah v Sloveniji, pri čemer bi s posodobitvijo zbirk podatkov za odmero NUSZ prispevali k izboljšanju kakovosti podatkov o stavbah in nezazidanih stavbnih zemljiščih. Urejena in kakovostna zbirka podatkov za odmero NUSZ bi omogočala pravičnejšo, učinkovitejšo in racionalnejšo obdavčitev nepremičnin. To posledično vpliva tudi na raven družbene sprejemljivosti obdavčitve nepremičnine, stabilnost davčnih prihodkov in znižuje raven

izogibanja plačevanja NUSZ. Kakovostna zbirka podatkov za odmero NUSZ bi bila uporabna tudi na drugih področjih, npr. za urejanje prostora, prostorsko načrtovanje, upravljanje nepremičnin idr. Izziv za izvedbo tovrstne raziskave v vseh občinah je povezan z neenotnim podatkovnim modelom in zahtevnim procesom pridobivanja in urejanja podatkov.

Slovenija se zaveda pomena doseganja ravnovesja med povečanjem prihodkov in gospodarsko rastjo z izboljšanjem kakovosti obdavčenja. Pri tem želi izboljšati strukturo posameznih vrst davkov, med drugim z razširitvijo davčnih osnov, ter izboljšati izpolnjevanje davčnih obveznosti in okrepiti davčno upravo. V okviru tega načrtuje nadaljnje reforme obdavčitve nepremičnin, saj davki na nepremičnine, kot navajajo številni avtorji (Johansson idr., 2008; Heady idr., 2009; Arnold idr., 2011), najmanj ovirajo gospodarsko rast. Glede na aktivne gospodarske in zakonodajne spremembe na lokalni in državni ravni so lahko rezultati raziskave v podporo odločitvam na obravnavanem področju. Na izsledke raziskave se je mogoče nasloniti tudi pri pripravi sprememb sistema obdavčitve nepremičnin v Sloveniji. Pri pripravi novega sistema obdavčitve nepremičnin je treba posebno pozornost nameniti kakovosti in medopravilnosti uradnih zbirk podatkov o nepremičninah. Zato predlagamo izvajanje redne, neodvisne presoje kakovosti podatkov v skladu s standardiziranimi metodami in izvajanje programov ozaveščanja lastnikov nepremičnin o stanju podatkov in o pomenu kakovosti podatkov o njihovih nepremičninah. K izboljšanju kakovosti uradnih zbirk podatkov lahko prispevata tudi spletna storitev vpogleda v podatke o nepremičninah in možnost predlaganja sprememb podatkov z ustreznimi, uporabniku prilagojenimi kartografskimi prikazi podatkov.

Simon Starček, Ig, Slovenija
E-naslov: simon.starcek@gmail.com

Maruška Šubic Kovač, Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo, Ljubljana, Slovenija
E-naslov: maruska.subic-kovac@fgg.uni-lj.si

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Vedrana IKALOVIĆ
Leonardo CHIESI

Dinamični občutek doma: prostorsko-časovni vidiki mobilnosti mladih Tokijčanov

V visoko industrializiranih in institucionaliziranih družbah, ki stremijo k čim večji učinkovitosti, morajo biti posameznikove dejavnosti usklajene z dnevnim ritmom mesta. Kot prostorsko in institucionalno okolje se mesto ljudem vsiljuje in vpliva na stopnjo njihove navezanosti na kraj, s tem pa posledično spreminja njihov občutek doma. To je najopaznejše v današnjih mestih, kjer je vsakdanje življenje zelo dinamično in se počitek pogosto odvija zunaj prebivališča (tj. na poti). S proučevanjem prostorsko-časovnih vidikov mobilnosti mladih Tokijčanov avtorja v članku analizirata, kako mesto vpliva na njihov občutek doma in stopnjo navezanosti na fizično okolje. Njune ugotovitve razkrivajo dinamičen občutek doma, pri čemer so poti pomembnejše od korenin, navezanost pa ni omejena samo na en kraj, ampak je razumljena bolj kot navezanost na časovno-prostorske odnose, ki jih ustvarjajo ljudje in ustanove s svojimi dejavnostmi.

Ključne besede: občutek doma, navezanost na kraj, gibanje, sodobno mesto

1 Uvod

»Ko opustimo prepričanje, da je naš življenjski svet zakoreninjen na enem mestu, lahko sčasoma ugotovimo, da nezakoreninjenosti ne doživljamo več kot eksistencialno tesnobo in obup, ampak kot svobodo in lahkotnost, ki nam končno omogočata, da se preselimo.« (Rajchman, 1998: 88)

Vsakdanje življenje poteka v skladu s svojim običajnim časom, ki temelji na letnih časih, koledarju in posameznikovem notranjem času, ki je intersubjektivno na voljo (Berger in Luckmann, 1991). Na urbaniziranih območjih, kjer živi več kot polovica svetovnega prebivalstva, je treba dejavnosti časovno in prostorsko uskladiti z vsakodnevnim ritmom mesta. Avtorja v članku z vidika navezanosti na kraj in občutka doma proučujeta življenjske sloge v sodobni družbi in njihove spremembe, ki jih je povzročila industrializacija in so pomembno preobrazile tradicionalne načine življenja. Mesto analizirata kot prostorsko in institucionalno okolje z vidika posameznika. Kot prostorsko okolje, v katerem so razporejeni kraji, ki omogočajo dejavnosti, pri izvajanju katerih se ljudje počutijo kot doma, mesto zagotavlja prostore, na katerih posamezniki živijo, delajo in se družijo (Maki, 1979; Ashihara, 1983; Caballero in Tsukamoto, 2006; Maki in Mulligan, 2008). Te pomembne kraje povezuje z različnimi načini prevoza, kar ustvarja mrežo ali preplet dnevnih dejavnosti (Ikalović in Chiesi, 2018). Kot institucionalno okolje in družbeno ustvarjena objektivnost pa mesto vsiljuje in uveljavlja razne prostorsko-časovne sisteme, katerim morajo posamezniki prilagoditi svoj notranji čas (Berger in Luckmann, 1991).

Vse od prehoda iz težke industrije v storitvene dejavnosti je središče gospodarske, industrijske in institucionalne moči na Japonskem njeno glavno mesto, Tokio. Tokio je velemesto z največjim številom prebivalcev,[1] podjetij in zaposlenih na svetu (Fujita in Tabuchi, 1997). V tem prostorsko-časovnem sistemu so zunanje in notranje premestitve zaposlenih[2] nekaj običajnega, veljajo pa za eno najzanimivejših značilnosti japonskega sistema zaposlovanja. V članku so obravnavane socialne in psihološke posledice premeščanj, kot sta slabenje družinskih vezi (Geis in Ross, 1998) in vpliv novih okolij na človekovo dobro počutje (Brett, 1982). Kako lahko mesto ali v tem primeru Tokio kot prostorsko in institucionalno okolje spremeni občutek doma in stopnjo navezanosti na fizično okolje pri prebivalcih? Pojma navezanosti in doma sta obravnavana s fizičnega, socialnega, časovno-psihološkega vidika v skladu z ugotovitvami Carol Werner idr. (1985) ter Leile Scannel in Roberta Gifforda (2010), s poudarkom na časovni razsežnosti.

Na podlagi proučevanja časovnosti in vsakdanjega mestnega ritma je bil opredeljen dinamičen občutek doma, pri katerem so poti (ang. *routes*) pomembnejše od korenin (ang. *roots*) (Hall, 1995; Massey in Jess, 1995; Clifford, 1997; Gustafson, 2001). Navezanost, ki se kljub temu razvije v mestnih okoljih, pomeni pravzaprav navezanost na kraj, ki jo ljudje in ustanove ustvarjajo s svojimi dejavnostmi, ter navezanost na prostorsko-časovne sisteme mesta.

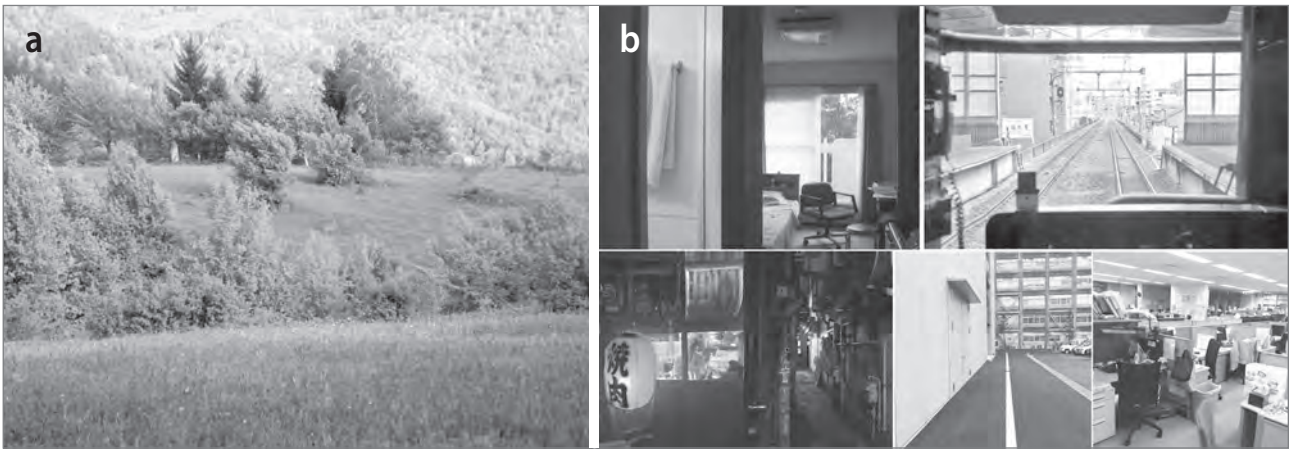
2 Teoretično ozadje

2.1 Dom in navezanost na kraj

Po industrijski revoluciji ter ločitvi bivalnega in delovnega prostora se je tradicionalno, statično pojmovanje doma in navezanosti na kraj začelo spreminjati. Za proučevanje obeh pojmov in njunih povezav sta pomembni dve desetletji: 70. leta 20. stoletja, ko so se družbeni geografi osredotočali na posameznike kot zavedne in čuteče subjekte, in ne kot objekte ali preprosto racionalna bitja (Relph, 1976; Tuan, 1977), ter 90. leta 20. stoletja, ko se je zaradi turizma (zlasti masovnega) povečala mobilnost, ki je začela ogrožati zakoreninjenost kot svojo nasprotno različico (Urry, 2002; Augé, 2008).

V 70. letih 20. stoletja se je na podlagi osredotočanja na doživljajski odnos ljudi do sveta abstrakten prostor spremenil v kraj, ki ga ljudje doživljajo in občutijo, navezanost na kraj pa se je proučevala in opredeljevala na podlagi pojmov, kot so topofilija, notranje dojemanje prostora (ang. *insideness*) in avtentičnost (Relph, 1976; Tuan, 1977; Werner idr., 1985; Smaldone, 2006). Ti pojmi so postali skupno izhodišče za proučevanje prostora in kraja na različnih ravneh in v okviru različnih meja (bodisi znotraj resničnih, fizičnih enot bodisi znotraj konceptualnih, abstraktnih in teoretičnih meja). Proučevala se je navezanost na hišo, sosesko, mesto, državo in spremljajoče družbene prvine, kot so družina, prijatelji, sosedje, družbene skupine (npr. sodelavci) ali narodnost (Marston, 2000; Hidalgo in Hernandez, 2001; Beatley, 2005; Ng idr., 2005; Blunt, 2007; Lewicka, 2010). S pojavom in razvojem družbenih in prostorskih oblik so postali raziskovalni okviri kompleksnejši, raziskave opisanih pojavov pa so se začele prepletati. Z metodološkega vidika se je poskušal opredeliti večstopenjski in večdimenzionalni celostni okvir, ki bi vključeval več vidikov istega pojma. Tako so bili razviti tridelni okviri, ki so vključevali prostorske, družbene in psihološko-časovne vidike proučevanih pojavov (Werner idr., 1985; Mallett, 2004; Scannell in Gifford, 2010), navezanost in dom pa sta postala dinamična pojma.

Raziskovalci so začeli proučevati gibanje in kraje, ki omogočajo gibanje, premikanje in potovanje, kot nekraje, ki so v marsičem povsem enaki in brez kontekstualnih lastnosti (Zukin, 1998, 2009; Augé, 2008). Potovanja in vsakodnevna vožnja na delo



Slika 1: Statični in dinamični koncept doma; (a) dom kot geografska referenčna točka; (b) dinamični dom kot mreža štirih pomembnih krajev, povezanih z raznimi prevoznimi sredstvi (foto: Vedrana Ikalović)

s čedalje vse večjo uporabo raznih pripomočkov (prenosnih naprav, kot so mobilni telefoni in prenosni računalniki) in mreženjem so postali nekaj običajnega, poleg tega so še okrepili nenavezanost ljudi na fizično okolje (Park idr., 2011).

Mobilnost in navezanost na kraj danes nista več nasprotji, temveč ju je treba proučevati kot dopolnjujoča se ali združljiva pojma. Gibanje je sestavni del življenja, naj bo to z vidika vsakodnevnih dejavnosti ali celotnega človekovega življenja. Gibanje je norma ali neizogibna prvina, o kateri se pogosto niti ne sprašujemo, ampak jo imamo za samoumevno. Paradigma mobilnosti poudarja, da so vsi kraji povezani v omrežja povezav, ki segajo prek posameznega kraja, in presega dojemanje območij kot prostorsko fiksnih geografskih zbiralnikov družbenih procesov (Sheller in Urry, 2006). V omrežnih družbah prostorske prakse in njihove stalne ponovitve določajo in ustvarjajo kraje, katerih pomen izhaja iz običajnih mobilnosti in časovno-prostorskih rutin, ki so hkrati individualne in družbene (Pred, 1984; Blunt, 2007; Cresswell, 2013; Seamon, 2015). Nekatere prakse in njihove ponovitve so odvisne od možnosti, ki jih ponuja okolje (Berger in Luckmann, 1991; Gibson, 2014). To se v sodobnih mestih vsakodnevno izraža na dva načina: 1. z vsakdanjimi praksami in običajnimi mobilnostmi, ki temeljijo na mestni infrastrukturi in so od nje odvisne (hkrati jih ta infrastruktura tudi pospešuje), ter 2. s praksami in rutinami na javnih, poljavnih in trgovskih prostorih, ki jih mesto zagotavlja, načrtuje, oblikuje, ustvarja in vzdržuje s svojimi industrializiranimi sektorji.

V industrijskih družbah in zlasti v Tokiu se v življenju posameznika kaže močna odvisnost od kulture podjetja, v katerem je zaposlen, pri čemer imajo velike korporacije močno tradicijo premeščanja zaposlenih med podjetji, ne glede na to, ali se zaposleni s tem strinjajo ali ne.[3] Premeščanja so postala nekaj običajnega ter povzročajo prostorsko-časovno razdrobljenost in začasne odnose med posamezniki in njihovimi trenutnimi okolji.

2.2 Kraj in mesto

Ko ljudje zamenjajo stalno prebivališče in se preselijo v drug kraj, so se prisiljeni (znova) naučiti vzorcev vsakdanjega življenja v novem okolju (v sodobnih mestih pa vzorcev v omrežjih krajev). Kot navaja Seamon (2015), sprememba vzorcev lahko povzroči čustveni stres, saj mora posameznik nova vedenja velikokrat ponoviti, preden se jih nauči. Ko se telo navadi na novo okolje in doseže stanje umirjenosti, se človek začne počutiti kot doma; gre za čas neaktivnosti, katerega bistvena doživljajska struktura je občutek domačnosti (Seamon, 2015: 70), oziroma za običajno neopaženo, samoumevno situacijo, v kateri se človek v vsakdanjem svetu počuti udobno in domače (Dovey, 1985).

Pred (1984) opredeljuje kraj kot proces, ki spodbuja dejavnosti ljudi in ustanov, hkrati pa te dejavnosti ustvarjajo njega. Navaja, da družbene delitve nekatere mobilnosti omogočajo, druge pa ovirajo (Pred, 1984, navedeno v Cresswell, 2013). Predovi kraji so zelo institucionalizirani in si prisvajajo čas posameznikov, zato lahko o značilnostih in posebnostih prisvojenega časa govorimo v vsaki družbi in kulturi, tako na ravni mesta kot v različnih vrstah mest (Hall in Barrett, 2012). Savage idr. (1993) na primer opredeljujejo naslednje vrste mest: mesta tretjega sveta, mesta v komunističnih državah, globalna mesta ter starejša in nova industrijska mesta. V omrežnih in informacijskih družbah, ki so odvisne od mobilnosti in povezanosti, zaradi katerih hkrati tudi nastajajo, sodobno mesto (zlasti velemesto) ustvarjajo dejavnosti ljudi, ki poznajo vsakdanjo dinamiko mesta, in dejavnosti ustanov. Z vidika prebivalcev bivanje vključuje gibanje in razdrobljeno življenje, pri čemer se vsakdanje življenje razteza čez celotno omrežje. Velemesto

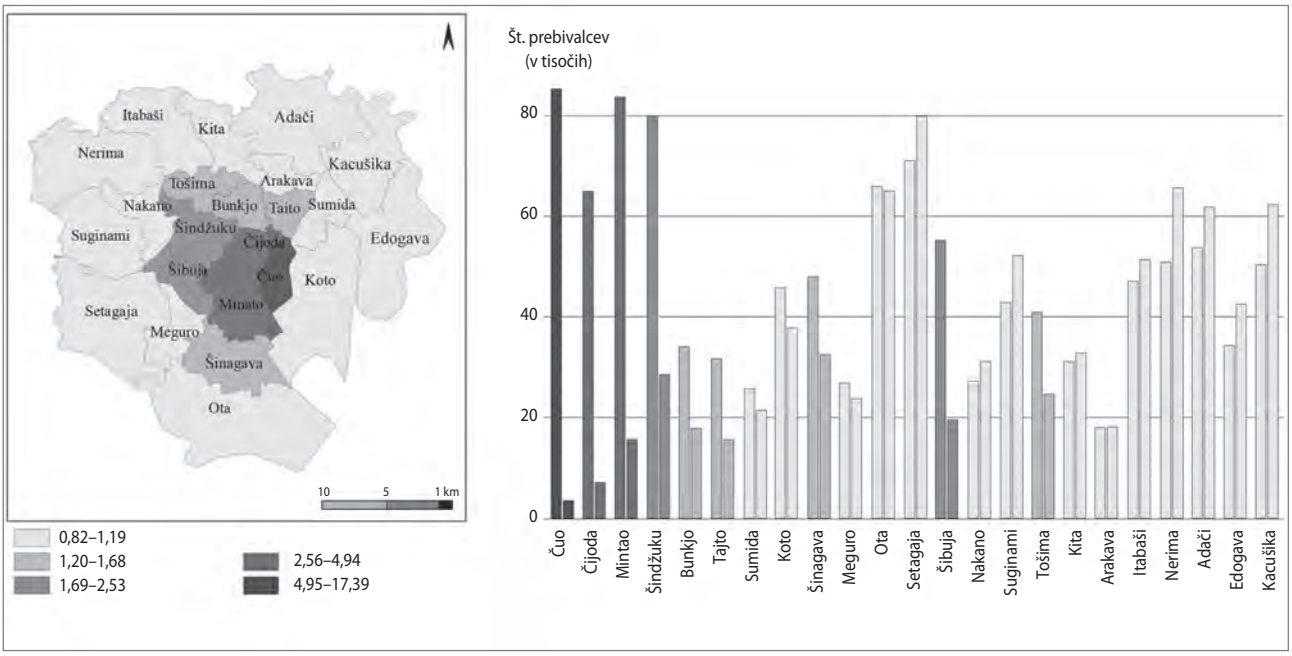
Slika 2: Domače dejavnosti zunaj doma; (a) dejavnosti, ki se običajno povezujejo s konceptom doma; (b) dom, prenesen v mestni prostor (foto: Vedrana Ikalović)

je postalo povezan prostorsko-časovni sistem s posebnim ritmom, ki se vsiljuje posamezniku (Altman, 1975; Somerville, 1997).

2.3 Mesto in dom

Z industrializacijo gospodarskih sektorjev, razvojem tehnologije in masovnim pritokom ljudi na mestna območja so v okviru koncepta doma postali pomembni fizični, družbeni in časovni vidiki. V prostorskem smislu je mesto moralo zagotoviti najrazličnejše oblike nastanitve, v institucionalnem smislu pa je pospešilo pretok informacij, blaga, storitev, kapitala in ljudi (Fujita idr., 2004). Na arhitekturni ravni so se v Tokiu med industrijsko revolucijo (ali meidžijsko obnovo) in po njej tradicionalna bivališča postopno preobrazila v srednje velike samostojne hiše, najemne hiše in večstanovanjske stavbe za poznejši srednji delavski razred, katerega pripadniki so živeli v različnih bivališčih, ki so jih zgradila podjetja, agencije ali združenja.[4] Poleg tega so se zaradi lažjega obvladovanja časa in razdalj ter usklajevanja dejavnosti v času in prostoru dejavnosti, ki jih posameznik običajno opravlja doma, iz zasebnega (bivalnega) prostora preselile v javno okolje (na delovno mesto) in v prostore druženja (Oldenburg, 1989; Caballero in Tsukamoto, 2006), kot so vlaki, lokalne trgovine z mešanim blagom, manjše restavracije, ki ponujajo rezance, javna kopališča, samopostrežne pralnice perila, hoteli, znani po ljubezenskih srečanjih, itd. Ko so ljudje govorili o domu v prostorskem smislu, to ni bil več nujno kraj njihovega stalnega prebivališča, ki so ga uporabljali predvsem za spanje in shranjevanje stvari (Ashihara, 1989; Yūko in Yokokawa, 1995).

Življenje je nomadsko, kar pomeni, da ni omejeno na samo en kraj, bivanje pa je osredotočeno na potovanje. Ljudje se ne preselijo v bivališče, ampak bivajo tako, da se selijo (Deleuze in Guattari, 1988; Casey, 2013). Običajne lastnosti doma so v sodobnem mestu razpršene med vsaj štirimi kraji (med bi-



Slika 3: Razmerje med številom dnevnih in nočnih prebivalcev v 23 centralnih tokijskih okrajih (grafični prikaz: Vedrana Ikalović)

vališčem, delovnim mestom, prostorom druženja in prostorom počitka), med seboj povezanih z raznimi prevoznimi sredstvi, v katerih prav tako potekajo dejavnosti, ki jih posameznik običajno opravlja doma (Ikalović in Chiesi, 2018). Prek tega omrežja se industrializirani sektorji vsiljujejo v posameznikov vsakdanji ritem življenja. Čas, ki ga ljudje preživijo v prometu ali na poti med pomembnimi kraji, je enak času, ki ga preživijo v zasebnosti svojega doma (slika 2).

2.4 Študija primera: Tokio

Celo v današnji postindustrijski dobi je na Japonskem pogost razlog za selitev premestitev na drugo delovno mesto. Možnost premeščanja zaposlenih med podjetji velja za eno najzanimivejših značilnosti japonskega sistema zaposlovanja[5] (Dirks, 1999; Meyer-Ohle, 2009). Podjetja premeščajo zaposlene sem in tja, pri čemer ti opravljajo različna dela, med drugim pa praksa premeščanj na Japonskem vključuje tudi začasne in stalne zunanje premestitve, zaradi katerih zaposleni težko usklajujejo družinsko in poklicno življenje (Maeura, 2016). Premestitve pogosto ne zahtevajo privolitve zaposlenega, več prilagodljivosti pa je v tem pogledu pri večjih podjetjih. Premestitve zaposlenih med podjetji so bile proučevane na različnih ravneh. Raziskave se osredotočajo na posameznika (motivacijske dejavnike), organizacijski razvoj (stroškovno učinkovite transakcije) in strukturne spremembe (na mikroekonomski ravni) (Dirks, 1999), a čeprav nekatere to problematiko proučujejo celo z vidika zaposlenih, se ne ukvarjajo z navezanostjo na kraj in občutkom doma. Ne glede na to, ali proučujejo osebnostne in demografske dejavnike, mikro- ali makroekonomske dejavnike in institucionalne razmere (Frey in Stutzer, 2000), gre pri večini za kvantitativne študije. Raziskava, navedena v tem članku, uporablja drugačen pristop, saj prostorsko-časovne sisteme proučuje z osebnega vidika in na podlagi primerov mladih Tokijčanov – posameznikov, ki trenutno živijo in delajo na tokijskem metropolitanskem območju, v preteklosti pa so živeli v različnih mestih z različnimi prostorsko-časovnimi značilnostmi in različnim vsakdanjim urbanim ritmom. Avtorja proučujeta in primerjata njihovo navezanost na kraje, v katerih so prej živeli, in jo analizirata z vidika življenjskega poteka, s poudarkom na pogostih selitvah.

Z industrijskim prehodom iz dvopolnega regionalnega sistema Tokia in Osake ter dvema prehodoma proizvodnih dejavnosti (iz lahke v težko industrijo in iz težke industrije v visokotehnološke in storitvene dejavnosti) je Tokio postal pomembno mednarodno finančno središče z visoko koncentracijo velikih podjetij[6] (Fujita in Tabuchi, 1997). Razvoj komunikacijskih omrežij je povzročil večjo odvisnost od informacij in spodbudil zgoščanje poslovnih sektorjev v Tokiu (Okamoto, 1997), dnevne migracije pa so postale sestavni del življenja. Zaradi zaposlenih in študentov, ki se vsak dan vozijo v središče Tokia zlasti iz sosednjih prefektur Sajtama, Čiba in Kanagava, so postale očitnejše razlike med številoma dnevnih in nočnih prebivalcev v mestih. Število dnevnih prebivalcev se nanaša na število ljudi, ki so na območju med običajnim delovnim časom, vključno z delavci, v nasprotju s stalnimi prebivalci, ki so na območju običajno zlasti zvečer in ponoči. Tokijski okraj Čuo ima na primer indeks 17,39, kar pomeni, da je v njem podnevi do sedemnajstkrat več ljudi kot ponoči (slika 3).

Kompleksnost upravnih meja je grafično prikazana na sliki 4, ki prikazuje 1. metropolo Tokio s 23 centralnimi okraji, ki se običajno imenuje »Tokio«, 2. tokijsko metropolitansko območje, ki vključuje 23 centralnih okrajev, 26 mest, tri naselja in eno vas, 3. meje, ki jih je določil japonski statistični urad, s spremembami v številu dnevnih in nočnih prebivalcev (vključene so občine, iz katerih se najmanj 10 % prebivalcev dnevno vozi v centralne okraje), in 4. širše območje Tokia.

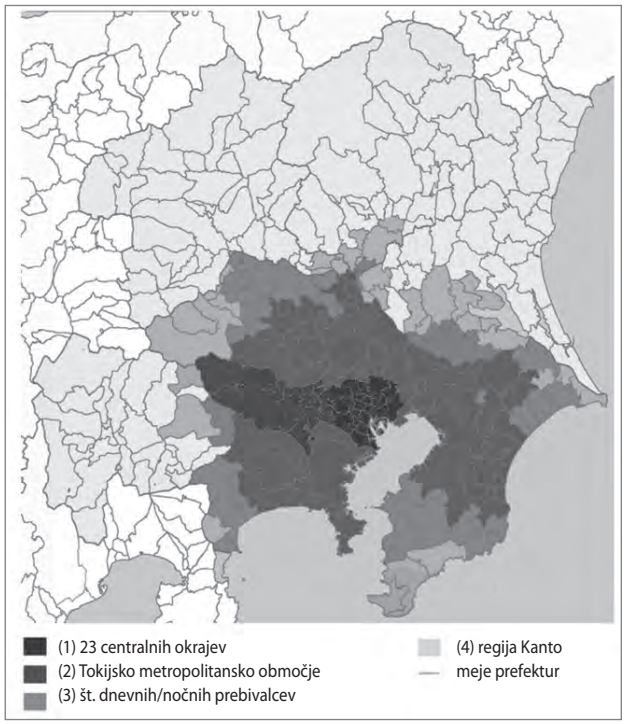
Japonska vlada zagotavlja statistične podatke samo za uradne upravne enote (tj. mesta in prefekture), metropolitanska območja pa niso uradno ali formalno opredeljena. Zato so številni raziskovalci zanje razvili svoje opredelitve[7] (Fujita idr., 2004). V tem članku so zgoraj omenjene značilnosti Tokia obravnavane z vidika posameznika ali osebe, na notranji čas katere med njeno delovno aktivno dobo vpliva mesto s svojo prostorsko in institucionalno realnostjo.

3 Metoda

Polstrukturirani intervjuji so bili oblikovani na podlagi modela Leile Scannel in Roberta Gifforda (2011), ki sta analizo navezanosti na kraj strnila v tridelni organizacijski okvir (oseba, kraj, proces), ki se lahko uporablja za proučevanje tega večdimenzionalnega pojma. Dimenzija osebe se nanaša na individualno ali kolektivno določene pomene, dimenzija kraja poudarja značilnosti kraja na prostorski ravni, psihološka dimenzija pa vključuje afektivne, kognitivne in vedenjske sestavine. Raziskave dóma kot večdimenzionalnega pojma hkrati dajejo okvir za njegovo proučevanje kot celote fizičnih, družbenokulturnih, psiholoških in časovnih značilnosti (Dovey, 1985; Werner idr., 1985; Sixsmith, 1986; Després, 1991). Na podlagi tridelnega okvira so se vprašanja nanašala na družbene, prostorske in časovno-psihološke značilnosti.

Opravljenih je bilo 30 intervjujev s 17 moškimi in 13 ženskami, ki živijo na širšem območju Tokia in delajo v metropoli Tokio. Petindvajset anketirancev je bilo zaposlenih, dva sta bila samozaposlena, trije pa so bili še študenti. Stari so bili od 23 do 60 let in so spadali med delovno aktivno prebivalstvo. Glavni poudarek analize je bil na 25 mladih posameznikih, starih od 23 do 39 let, kot sta to opredelila Erikson in Erikson (1997), dodatnih pet intervjujev pa je bilo opravljenih za primerjavo rezultatov pri različnih starostnih skupinah.

Analiza intervjujev je temeljila na selektivnem kodiranju, pri katerem so vse kategorije v odnosu do jedrne kategorije postavljene kot pogoji, strategije akcije ali interakcije ali kot posledice (Strauss in Corbin, 1997). Zbiranje in analiza podatkov sta bila povezana procesa, vsi pojmi in ugotovitve pa so bili vključeni v intervjuje. Intervjuji so trajali 30 do 60 minut, bili



Slika 4: Meje v Tokiu: centralni okraji, tokijsko metropolitansko območje in regija Kanto (grafični prikaz: Vedrana Ikalović)

so posneti, zapisani in nato analizirani vrstico za vrstico. Podatki so bili pripravljeni po zgledu raziskav, ki so jih izvedli Strauss in Corbin (1997), Moran (2013) ter Glaser in Strauss (2017).

Prostorsko-časovni sistemi anketirancev so prikazani s časovno-prostorskimi diagrami, ki prikazujejo pogostost selitev in trajanje bivanja v posameznem mestu (Pred, 1984; Hägerstrand, 1985; Latham, 2003; Knowles in Sweetman, 2004).

Intervjuji so bili opravljeni, zapisani in kodirani v angleščini, da pa bi se izognili morebitnim jezikovnim oviram, so bile ključne besede pojasnjene tako v angleščini kot japonščini.

4 Analiza

Z analizo intervjujev sta bili prepoznani dve glavni kategoriji: razdrobljena časovnost in pomanjkanje nostalgije. Razdrobljena časovnost se nanaša na prostorsko-časovne spremembe, ki jih povzročajo pogoste selitve, ki so najopaznejše med delovno aktivno dobo, občutja, povezana s temi selitvami, in proces, pri katerem se posameznik v novem okolju začne počutiti kot doma (Dovey, 1985). Pomanjkanje nostalgije je povezano z okolji, v katerih je posameznik prej živel, domovi v otroštvu, spomini in predmeti, ki imajo za posameznika poseben pomen – tj. s pojmom doma kot kraja, kjer posameznik hrani spomine, zatočišča in kraja, na katerega se posameznik želi vrniti (Tuan, 1977; Dovey, 1985; Bachelard in Jolas, 1994).

4.1 Razdrobljena časovnost

> Rodil sem se v Sasebu[8]... blizu Nagasakija.[8] In ... tam sem živel samo eno leto. [Iz Saseba sem se preselil] v Kumamoto.[8] Tudi tam sem živel eno leto. Nato sem se preselil v predel Mita[8] v Tokiu. Nato smo se preselili v Ogikubo,[8] kjer smo ostali približno pet let. Tam sem hodil v vrtec in ... približno dve leti v osnovno šolo. Nato smo odšli v Sendaj.[8] Tudi tam smo ostali pet let ... [Iz Sendaja sem se preselil] v Niigato,[8] kjer sem prav tako preživel pet let. Tam sem dokončal srednjo šolo in opravil sprejemne izpite za univerzo v Saporu[8] v prefekturi Hokaido. Tako sem se preselili v Saporo, kjer sem živel skupno osem let ... Nato sem za dve leti odšel v Grčijo, potem pa sem se preselil sem [v Mitako[8]]. Tukaj živim že deset let (intervju št. 22).

Tokijčani se pogosto selijo, zato otroštvo preživijo v različnih mestih. Med vsemi mesti in kraji, v katerih so živeli, je včasih zelo težko ali celo nemogoče določiti njihov domači kraj. Razlogi za selitev so v vsakem življenjskem obdobju drugačni: v otroštvu je najpogostejši razlog za selitev premestitev starša (običajno očeta) na drugo delovno mesto, v odrasli dobi pa je glavni razlog njihova lastna premestitev ali premestitev njihovega zakonskega partnerja.

> Mati je odrasla v Tokiu ... Rodila me je v tokijski bolnišnici, odrasla pa sem v regiji Kansaj ... v Nišinomiji.[8] V Nišinomiji sem živela vse do srednje šole, nato pa smo se zaradi očetove službe preselili v Manilo ... Nato smo živeli v Kobeju, nedaleč od Nišinomije. Potem sem se preselila v Kanto ... Nato sem se poročila in se zaradi moževe službe preselila v Singapur (intervju št. 19).

Anketiranci, rojeni na tokijskem metropolitanskem območju, so se selili iz enega tokijskega okraja v drugega, anketiranci, rojeni v majhnih mestih, pa so se selili med različnimi predeli istega mesta ali med različnimi mesti iste prefekture. Selitve in menjava stalnega prebivališča so sestavni del njihovega življenja.

> Rodil sem se v prefekturi Akita. Živeli smo v glavnem mestu Akita, vendar ne vedno na istem mestu. Tam sem živel 18 let, v tem obdobju pa smo se verjetno preselili več kot petkrat. Oče je bil policist, zato smo se morali stalno seliti (intervju št. 14).

Anketiranci, rojeni v predmestju Tokia (v okoliških prefekturah, kot je Sajtama, in različnih predmestnih naseljih), se najdlje vozijo na delo ali v šolo, nekateri pa še vedno živijo pri starših (v družinski hiši). Njihova navezanost in občutek doma sta drugačna kot pri zgoraj omenjenih dveh anketirancih, saj niso spremenili stalnega prebivališča. Nenehno pa se spreminja lokacija njihove službe, saj so v svojem podjetju vsako leto premeščeni v drug tokijski okraj, zato se morajo stalno prilagajati novemu delovnemu okolju.

> Pravzaprav sem ob zadnji premestitvi hotel zamenjati službo. Svoji delovodji sem povedal, da želim dati odpoved, vendar me je ... želela prepričati, da ostanem. Rekla mi je: »Poskušala bom urediti, da te ne bodo več premeščali.« Potem ko sem se navadil na okolje in vzdušje, se mi je zdelo, da lahko tam zlahka delam ..., in po nekaj mesecih nisem več želel zamenjati službe (intervju št. 23).

Devetindvajsetletna anketiranka je povedala, da je bila v štirih letih štirikrat premeščena in da se je zdaj na to že navadila. Sprva je potrebovala zelo veliko časa, da se je začela na novem delovnem mestu počutiti udobno, ker pa je delo vedno enako (proces je enak), se zdaj v službi počuti bolj sproščeno. Podobno meni še ena anketiranka, stara dobrih 20 let:

> Mislim, da sem pri prvi premestitvi potrebovala dolgo časa [da sem se privadila]. Zdaj pa to službo opravljam že tako dolgo, da morda potrebujem samo kak mesec ali dva (intervju št. 25).

Čas vsakodnevne vožnje od doma na delo je ob vsaki premestitvi skoraj enak (približno uro in pol), zato v tem pogledu ni bistvenih razlik: proces je enak in tudi časovno-prostorski odnosi se ne spreminjajo, čeprav se spremenita kraja prebivanja in dela. Štiriindvajsetletnik je zaradi službe v Osaki začel živeti v Kjotu. Edino, česar ni bil pripravljen spremeniti, je bila razdalja med njegovim bivališčem in delovnim mestom. Čas vsakodnevne vožnje od njegove hiše v Kjotu do pisarne v Osaki je bil podoben času, ki ga zdaj za vsakdanjo vožnjo na delo porabi v Tokiu, zaradi česar se je lahko na spremembo hitro privadil.

Šestindvajsetletni anketiranec, ki je bil službeno premeščen v drugo mesto, pravi, da se je zaradi te premestitve tudi sam spremenil. Zaradi narave svojega dela in pogostih selitev se sprememb ne boji več.

> Pravzaprav je bilo zame sprva zelo težko. Ko pa sem imel že več izkušenj s premestitvami in selitvami, sem se na to nekako navadil ..., da se ljudem predstavim in začnem z njimi komunicirati ... Morda je ena mojih najpomembnejših izkušenj in sprememb v mišljenju to, da se ne bojim več sprememb (intervju št. 26).

Vsi domovi, v katerih so anketiranci prej živeli, so zanje enakovredni. Nobeden ne izstopa po pomembnosti in vsi kraji, kjer so živeli, so jim bili pomembni, ko so tam prebivali. Trenutno jim je najpomembnejše mesto, v katerem zdaj živijo, ko pa so živeli v drugem mestu, jim je bilo pomembno tisto. Štiriintridesetletnik je v intervjuju povedal:

> Ko prispem na železniško postajo Ajase,[8] lahko rečem, da sem doma. Enako lahko rečem tudi za Šizuko, ker sem tam preživel toliko časa ... Živel sem tudi v vzhodnem Londonu, na ulici Liverpool. Vsakič ko sem tam, prav tako rečem, da je to moj dom (intervju št. 9).

Tako pa je občutek doma opisal petindvajsetletnik:

> Ko sem na Japonskem, se res počutim kot doma ..., vendar ko sem se vrnil v Avstralijo, sem se tudi tam počutil kot doma ..., ko sem šel v New York, pa sem se tudi tam počutil kot doma (intervju št. 12).

4.2 Pomanjkanje nostalgije

Nostalgija je opredeljena kot sentimentalno hrepenenje po obdobju iz preteklosti ali koprneča naklonjenost do tega obdobja, želja po vrnitvi v neki prejšnji čas v posameznikovem življenju v mislih ali dejanju, na njegov dom, v njegovo domovino ali k njegovi družini in prijateljem; sentimentalno hrepenenje po sreči, ki jo je v preteklosti občutil na nekem kraju ali ob nekem času. Pojavlja se ob spremembah; gre za prostorsko-časovno čustvo, povezano s preteklimi pomembnimi ljudmi in kraji, ki se običajno obravnava skupaj s pojmom doma. Ko človek govori o odhajanju in potovanjih, ga običajno prevzamejo nostalgični občutki izgube, zakoreninjenosti in pripadnosti (Mallett, 2004; Casey, 2013), na Japonskem pa nostalgijo izkorišča in trži turizem v smislu iskanja tradicionalnega načina življenja, pri čemer »se človek v svoji nostalgični domišljiji vrača v predindustrijsko, neurbano preteklost« (Creighton, 1997: 239).

Ko se Tokijčani preselijo, se zdi, da ne občutijo nostalgije po krajih, ki jih zapustijo. Enaintridesetletni anketiranec pravi, da so selitve lahko tako zoprne kot prijetne, hkrati pa se mu zdijo tudi osvežujoče.

> Hkrati so zoprne in prijetne ... Ker se vzdušje zamenja in je ... osvežujoče. Zaradi tega začnem drugače razmišljati o službi in svojem življenjskem slogu (intervju št. 28).

Rojen je bil v Fukuoki, kjer je preživel 25 let, po selitvi v Tokio pa se je v šestih letih petkrat preselil. Njegova družina še vedno živi v Fukuoki, vidi pa jo samo občasno, med zimskim ali poletnim dopustom ali ob posebnih priložnostih, kot so poroke. Kljub temu je ne pogreša in se počuti dobro.

Drugi anketiranec pravi, da po selitvi od doma sploh ni vzdrževal stika s svojo družino in se je le redko odzval na njihove telefonske klice. Vedel je, da jih lahko kadar koli pokliče, in to mu je zadoščalo.

> ... Mati me je včasih poklicala, sam pa jih pozneje sploh nisem več klical ... Če bi se počutil osamljenega, bi lahko to storil, vendar se nisem. Imel sem prijatelje in sodelavce ter veliko službenih stikov, s katerimi sem moral komunicirati ..., to mi je bilo dovolj (intervju št. 26).

Ko se preselijo, se redko vrnejo in nostalgijo občutijo samo med ponovnim obiskom. Šestindvajsetletnik pravi, da ne razmišlja o vrnitvi v Sendaj ali Osako, kjer je včasih živel, saj ju ne pogreša. Besedo »nostalgija« pa je uporabil pri opisovanju svojih občutkov med kratkim obiskom Sendaja. Samo v tem mestu je občutil nostalgijo. Obe mesti sta bili zanj pomembni, ko je v njih živel, ne čuti pa potrebe po vrnitvi.

> Kraji, v katerih sem živel? Mogoče bi rad še kdaj obiskal Saporo. Če ga ne bom, bo pa ravno tako dobro. Tako ... Drugače pa sem zadnjič srečal prijatelja iz Sendaja, ki se je tja vrnil in mi je pripovedoval o mnogih stvareh ..., o mestu ... »No, lepo,« je bilo vse, kar sem mu odvrnil. V bistvu me kot večino Japoncev skrbijo (tudi) posledice velikega potresa ... Sendaj se še vedno postavlja na noge.[8] »No, lepo,« sem mu rekel (intervju št. 22).

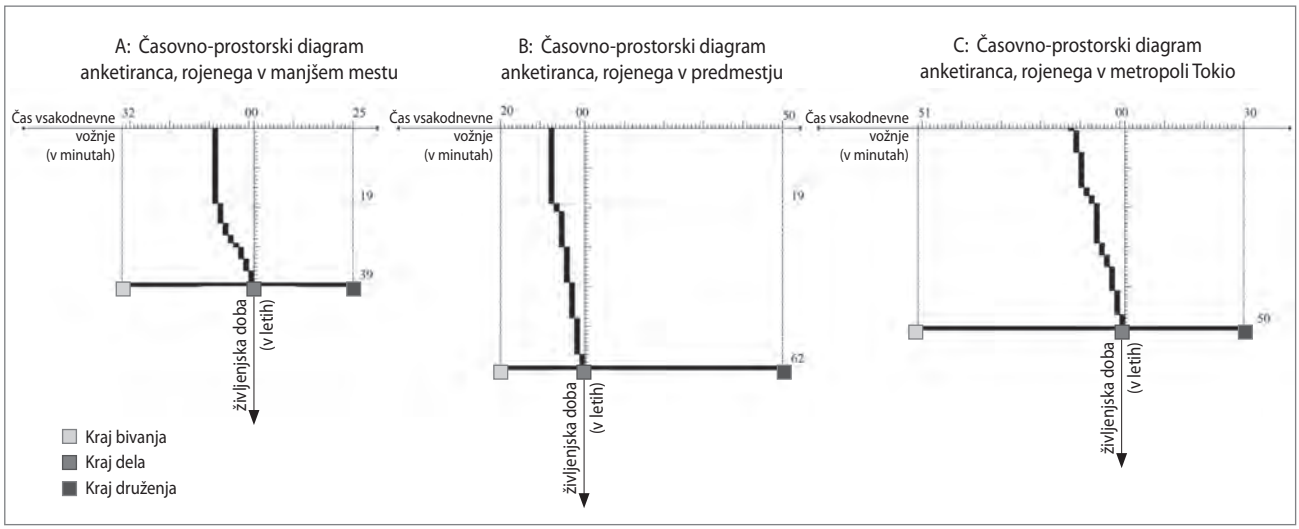
Vrnitev ni pomembna, pomembna je možnost vrnitve. Če se vrnejo, se ne vrnejo v kraje, ampak k ljudem. Tudi njihova primarna družina se pogosto preseli drugam in le redko živi v enem izmed domov, kjer so anketiranci prej živeli. Tudi pri tem se kaže pomembna razlika med anketiranci, rojenimi v malih mestih, in anketiranci, rojenimi v Tokiu. Pri prvih primarna družina pogosto še vedno živi v kraju, kjer so bili anketiranci rojeni, v enem primeru pa celo v isti hiši. Pri drugih pa družina ne živi več v isti hiši, kjer so anketiranci odrasli, zato do te hiše ne čutijo nostalgije (navezani so samo na svojo družino). Posledično je družbeni vidik doma pomembnejši od njegovega prostorskega vidika.

> Moji starši niso iz Fukuoke, čeprav tam živijo,[8] in ko obiščem njihovo hišo, tam nimam prijateljev ... Tja grem, da vidim starše, njihove hiše pa ne občutim kot svoj dom. Nimam svoje sobe, saj tam nisem živel, ko so hišo kupili (intervju št. 21).

Anketiranci, ki živijo v drugi državi (12 jih živi v tujini), se spominjajo tudi mesta. Če in ko se vrnejo, vedno omenijo, da pogrešajo mesto, tamkajšnje navade, način življenja in dnevni ritem.

> Bom iskreno povedal. Ko sem živel v New Yorku, nikoli nisem pogrešal Tokia. Živel sem blizu Centralnega parka, ki je bil čudovit in idealen za tek in sprehode ... Živel sem na območju, podobnem Ginzi[8] ..., stavbe, stavbe, stavbe ..., zato sem si res želel iti ven, v park. Živel sem v 25. nadstropju in ... hrup, smog ... Zares sem želel iti v park, kjer so bile zelene površine in drevesa ..., opazoval sem pse, ljudi ... in se počutil sproščenega (intervju št. 18).

Spomini na njihov dom v otroštvu in hiše, v katerih so prej živeli, so hkrati spomini na dejanja, dejavnosti in procese (igra-



Slika 5: Časovno-prostorski diagrami (grafični prikazi: Vedrana Ikalović)

nje s prijatelji, hojo v šolo itd.). Ob omembi prostorskih značilnosti krajev, v katerih so prej živeli, se običajno spominjajo naravnih prvin, kot so sadovnjaki, rečni bregovi in gozdovi.

5 Razprava

Avtorja stopnjo navezanosti na kraj in občutek doma obravnavata z vidika treh skupin, ki sta jih oblikovala na podlagi zbranih podatkov in se nanašajo na različne vrste odnosov z mestom. V prvo skupino spadajo anketiranci, rojeni v manjših mestih v drugih prefekturah, drugo skupino sestavljajo anketiranci, rojeni v predmestjih Tokia ali sosednjih prefekturah (kot sta Sajtama na severu in Kanagava na jugu), tretjo pa anketiranci, rojeni v središču Tokia. Na sliki 5 so prikazani časovno-prostorski diagrami, ki pomenijo obdobja, ki jih je posameznik preživel v posameznem mestu (navpična os), njegovo trenutno lokacijo in čas vsakodnevne vožnje v službo ali do kraja druženja (vodoravna os). V primerih A in B sta se anketiranca pri 19. letih iz manjšega mesta ali predmestja Tokia preselila v Tokio, potem pa se je pogostost njunih selitev močno spremenila. Pri anketirancih, rojenih v Tokiu, je število selitev večje.

Pri prvi skupini anketirancev je občutek doma jasno izražen in njegova lokacija je jasno opredeljena – dom (iz otroštva) je tam, kjer je njihova družina. Rodili so se v manjših mestih, na začetku študija in/ali ob iskanju službe po diplomi pa so se morali preseliti v večje mesto. Ko začnejo delati, njihove selitve postanejo pogostejše, pomembni pa jim postanejo kraji, kamor se morajo preseliti zaradi službe. Časovno-prostorski odnosi se spremenijo in običajno živijo blizu svojega delovnega mesta, v stanovanju, ki jim ga zagotovi podjetje. V tem primeru se le malo ukvarjajo z gospodinjstvom in ustvarjanjem doma, zato se njihova navezanost na kraj razvija postopoma. Še vedno gre bolj za navezanost na življenjski slog in proces, ne na fizično okolje oziroma kraj, ki se razvije na podlagi dejavnosti ljudi in ustanov.

Anketiranci, rojeni na širšem območju Tokia, med študijem običajno živijo doma pri svojih starših. Vožnja do šole je dolga, v središču Tokia pa se večinoma zadržujejo samo podnevi in tako tvorijo del dnevnega mestnega prebivalstva. Razdalja med njihovim krajem prebivanja in univerzo je sprejemljiva, zato jim med študijem ni treba zapustiti družinske hiše, čeprav se vsak dan vozijo po dve uri v eno smer. Pri tej skupini selitve postanejo pogostejše, ko začnejo hoditi v službo. Pri njih se kažeta dve vrsti selitev: premeščeni so ali v drugo mesto ali enkrat letno v drug tokijski okraj. Njihov kraj stalnega prebivanja ostane enak, tudi razdalja med prebivališčem in službo ostane bolj ali manj enaka (od 1 h 20 min do 1 h 40 min), spremenita pa se njihov kraj dela in delovno okolje. Časovno-prostorski odnos ostane enak, zato se tudi njihove vsakdanje dejavnosti in navade ne spremenijo.

Tretja skupina je najmanj navezana na fizično okolje in se najpogosteje seli. Zanjo sta kraj rojstva in domač kraj povsem različna. Anketiranci se večinoma selijo med tokijskimi okraji, navezani pa so na procese in življenjski slog. Odnose, ki jih ustvarijo v svojem okolju, lahko zlahka poustvarijo tudi drugje v Tokiu, zato se hitro prilagodijo na spremembe.

Anketiranci iz prve in druge skupine so na svoj dom iz otroštva močneje navezani, ker so med šolanjem živeli doma pri starših. Če že, so se preselili enkrat ali dvakrat v istem mestu in še to običajno v bližino svojega prvotnega doma. Njihov kraj rojstva je tudi njihov domači kraj.

Vsi anketiranci so razvili močne prostorsko-časovne odnose s svojimi mestnimi okolji, ki jih vsak dan znova ustvarjajo s svojimi dejavnostmi in dejanji ter jih s selitvami obnavljajo vse življenje. Zaradi vsakodnevnih dejavnosti in navad, oblikovanih v odnosu z mestom, se lahko zato v različnih mestih pojavijo različni časovno-prostorski odnosi.

6 Sklep

V skladu z novo paradigmo mobilnosti dejavnosti potekajo na poti, pri čemer se različni načini prevoza obravnavajo kot oblike materialnega in družabnega bivanja med vožnjo ter kot kraji različnih dejavnosti (Sheller in Urry, 2006). Sodobno mesto, v katerem je vožnja del vsakdanjika ter početek poteka na javnem prostoru in na poti, se spreminja v kraj, ki vpliva na posameznikove časovno-prostorske rutine in vsakodnevne dejavnosti. Z vidika prebivalcev in njihove časovno-prostorske organiziranosti mesto ovira njihovo dnevno dinamiko in delovanje kot prostorsko okolje, v katerem so (pol)javni in (pol) zasebni kraji med seboj dnevno povezani s prevoznimi sredstvi.

V članku sta avtorja uporabila tridelni okvir za oblikovanje polstrukturiranih intervjujev z mladimi Tokijčani, na podlagi katerih bi bolje razumela njihov občutek doma in stopnjo njihove navezanosti na kraj. Vprašanja se nanašajo na socialne, prostorske in časovno-psihološke značilnosti, pri čemer se nekatera navezujejo na prostorsko-časovne značilnosti krajev, kjer so prej živeli (rojstni in domači kraj), socialne odnose (sorodnike) ter spomine na kraje in osebne stvari in imetje anketirancev. Na podlagi teh vprašanj sta avtorja lahko analizirala pogostost gibanja in selitev ter s tem povezana mnenja anketirancev.

Izluščeni sta bili dve glavni vsebinski kategoriji: razdrobljena časovnost in pomanjkanje nostalgije. Pri razdrobljeni časovnosti je dom opredeljen kot progresiven in ponotranjen pojem, ki ni omejen na fizični kraj. Izkazalo se je, da so selitve najpogostejše pri Tokijčanih, ki so otroštvo preživeli na tokijskem metropolitanskem območju. Nostalgijo kot občutek, ki je tesno povezan s pojmom doma in spomini, pa sta avtorja proučevala v smislu potrebe po vrnitvi, a se je izkazalo, da je pri anketirancih primanjkuje. V velemestu, ki zagotavlja in vsiljuje stalno dostopnost, sta pomen nostalgije in občutek izgube oslabljena, možnost vrnitve pa je pomembnejša od dejanske vrnitve.

Na podlagi opisanih kategorij je v članku prikazan pojem dinamičnega občutka doma, ki bolj kot na fizičnih ali celo družbenih in psiholoških vidikih kraja temelji na navajenosti na procese in na navadah. Vloga mesta je razvidna iz časovno-prostorskih odnosov, ki jih posamezniki razvijejo z mesti, v katerih živijo. Zlasti v Tokiu sta zaradi odvisnosti ljudi od sistema prevoza in časa, ki ga preživijo v ustanovah, občutek doma in navezanost na kraj spremenjena, a to ne velja samo za Tokio. Število mestnega prebivalstva po svetu čedalje bolj raste, pri čemer gre za ljudi, ki so bili rojeni v mestih in so tam odraščali, njihov občutek navezanosti na kraj pa se razvije v tesnem odnosu z mestom.

V raziskavi, navedeni v tem članku, sta avtorja proučevala navezanost na kraj in občutek doma s kvalitativnega vidika, pri čemer sta navezanost ljudi na mesto izpostavila kot proces, ki spodbuja dejavnosti ljudi in ustanov, hkrati pa te dejavnosti ustvarjajo njega. Z vidika koncepta doma to pomeni premik od korenin k potem, s čimer so osnovnemu konceptu doma dodani še gibanje in povezave. Tako tradicionalni (statični) kot sodobni (dinamični) koncept doma poudarja povezavo med načrtovanim, oblikovanim in grajenim okoljem ter občutkom pripadanja krajem in navezanostjo nanje. Odnos med posameznikom in njegovim okoljem je posledica tega, kako so mesta načrtovana, oblikovana in zgrajena. V tem pogledu bi morali v okviru arhitekturnih in urbanističnih praks približati konceptualne in empirične raziskave, ob hkratnem upoštevanju zaznanih, mišljenih in živetih realnosti (Lefebvre, 1991) naraščajočega števila mestnih prebivalcev, ki »stalno začasno« spadajo v tokove med seboj povezanih sodobnih mest.

Vedrana Ikalović, Keio University, Department of Systems Design Engineering, Jokohama, Japonska
E-naslov: vedra@keio.jp

Leonardo Chiesi, University of Florence, School of Architecture, Firence, Italija
E-naslov: chiesi@unifi.it

Opombe

[1] Po podatkih državnega popisa prebivalstva je 1. oktobra 2010 v Tokiu živelo 13,16 milijona ljudi, od tega 1,48 milijona otrok (do 14. leta starosti), 8,85 milijona delovno aktivnih prebivalcev (starih od 15 do 64 let) in 2,64 milijona starejših (starih 65 let ali več). Otroci so zajemali 11,4 %, delovno aktivni prebivalci 68,2 % in starejši 20,4 % vseh prebivalcev.

[2] Stopnja notranjega gibanja zaposlenih izraža odstotek zaposlenih, ki so v zadevnem obdobju zamenjali delovno mesto v podjetju. Notranje gibanje je posledica sprememb zaposlitve v isti organizaciji, naj bo to zaradi premestitve, napredovanja ali nazadovanja na slabše delovno mesto.

[3] Na primer sjataku, danči in doujunkaj. Sjataku ali delavsko naselje je bilo sestavljeno iz domov, ki so spodbujali delavsko, družinsko vzdušje. Po drugi strani je bil doujunkaj združenje, ki je bilo po potresu ustanovljeno za zagotavljanje javnih stanovanj mestnim prebivalcem. Dančiji (kompleksi javnih stanovanj, ki jih je zgradila japonska stanovanjska družba, ki se je pozneje preimenovala v agencijo za urbani preporod) so bili v lasti velikih družb, ki so zaposlenim zaračunavale nizke najemnine ali najemnine sploh niso zaračunavale (Jinnai, 1995).

[4] Raziskava japonskega ministrstva za zdravje, delo in socialno varstvo je pokazala, da 92,5 % podjetij z več kot 1.000 zaposlenimi premešča svoje zaposlene in da posamezne premestitve v povprečju trajajo 3,87 leta (standardni odklon: 2,04 leta), v najbolj skrajnih primerih pa v povprečju 13,43 leta (standardni odklon: 8,45 leta) (Meyer-Ohle, 2009).

[5] Po podatkih popisa prebivalstva iz leta 2010 4,26 milijona (70,8 %) ljudi dela v terciarnem sektorju (trgovini, prevoznem sektorju, komunikacijah in drugih storitvah).

[6] Primeri tovrstnih opredelitev so standardno metropolitansko zaposlitveno območje (Yamada in Tokuoka, 1991), funkcionalno mestno jedro (Kawashima, 1981) in integrirano metropolitansko območje (Takeuchi in Mori, 1981). Nedavno sta Kanemoto in Tokuoka (2002) predlagala novo opredelitev: mestno zaposlitveno območje. Integrirano metropolitansko območje, kot ga je opredelil Takeuchi, združuje več občin (mest, naselij ali vasi), če to povečuje stopnjo notranjega gibanja zaposlenih (Kanemoto idr., 1996).

[7] Širše območje Tokia je najgosteje poseljeno metropolitansko območje na svetu, leži v japonski regiji Kanto in vključuje metropolo Tokio. Ta metropola je ena izmed 47 japonskih prefektur, ki jo sestavlja 23 centralnih okrajev, 26 mest, tri naselja in ena vas. Za vse posebne okraje se v angleščini običajno uporablja izraz »city« (mesto), ki se hkrati uporablja tudi za tokijsko metropolitansko območje.

[8] Mesto Sasebo v prefekturi Nagasaki, mesto Nagasaki v prefekturi Nagasaki, mesto Kumamoto v prefekturi Kumamoto, predel Mita v tokijskem okraju Minato, predel Ogikubo v tokijskem okraju Suginami, Sendaj, glavno mesto prefekture Midžagi (ki ga je prizadel potres v regiji Tohoku leta 2011), mesto Niigata v prefekturi Niigata, Saporo, glavno mesto prefekture Hokaido, mesto Mitaka na tokijskem metropolitanskem območju, mesto Nišinomija v prefekturi Hdžogo, Fukuoka, glavno mesto prefekture Fukuoka, predel Ginza v tokijskem okraju Čuo, železniška postaja Ajase v tokijskem okraju Adači.

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Atif Bilal ASLAM
Houshmand E. MASOUMI
Nida NAEEM
Mohammad AHMAD

Izbira stanovanjske lokacije ter vloga mobilnosti, družbenogospodarskih dejavnikov in namenske rabe prostora v pakistanskem mestu Hafizabad

Izbira stanovanjske lokacije v državah v razvoju in njena povezava z mestnim prevozom sta slabo raziskani in ne povsem dobro razumljeni, vrzel v poznavanju razmer pa je še večja v primeru malih mest v teh državah. Avtorji v članku proučujejo pakistansko mesto Hafizabad, pri čemer je njihov cilj zagotoviti podatke za prihodnje kvantitativne analize, ki bodo zajele izbire stanovanjskih lokacij v malih mestih na indijski podcelini. Avtorji so anketirali 365 prebivalcev štirih sosesk v mestu, v katerih živi skupno 19.042 ljudi. Anketi se je odzvalo 1,92 % posameznikov in 12,65 % gospodinjstev, pri čemer je bila stopnja zaupanja pri odgovorih prvih ±5,08 %, pri drugih pa ±4,79 %. Izsledki kažejo, da sta razpoložljivost komunalne infrastrukture ali storitev ter dostopna cena najpomembnejša dejavnika, ki vplivata na odločitve prebivalcev, da se preselijo. Takoj za njima so dejavniki, povezani s prevozom, dostopnostjo in družbenimi vprašanji, kot je bližina službe in sorodnikov. Vloga prevoza pri izbiri stanovanjske lokacije je v Hafizabadu manj pomembna kot v državah z visokimi dohodki. Ta ugotovitev kaže, kako lahko oblika mest vpliva na potovalne navade prebivalcev in da so manjša mesta bolj strnjena in hodljiva, saj približno 40 % ljudi v službo hodi peš. Ugotovitve raziskave lahko pristojnim vladnim organizacijam pomagajo učinkovito oblikovati politiko za mala mesta, saj politika, ki se uporablja v velemestih, zanje morda ni najprimernejša.

Ključne besede: izbira stanovanjske lokacije, mestni prevoz, mnenja ljudi, Pakistan

1 Uvod

V zadnjih dveh desetletjih je izbira stanovanjske lokacije pritegnila pozornost raziskovalcev mestnega prevoza, ki proučujejo povezave med mestnimi potovalnimi navadami in namensko rabo prostora. Zanima jih, ali se ljudje odločijo za prebivanje v izbrani soseski, ker se lahko od tam vsak dan lažje vozijo na delo ali lažje dostopajo do neslužbenih destinacij, ali pa lokacijo stanovanja izberejo zaradi drugih dejavnikov, kot so potrebe, povezane z mobilnostjo, vplivi grajenega okolja, njihovi pogledi in življenjski slog ter družbenogospodarski dejavniki.

Po podatkih vlade Islamske republike Pakistan (Government of Pakistan, 2017) je število prebivalcev v državi od leta 1998 do leta 2017 povečalo s 132,4 milijona na 207,8 milijona (57-odstotna rast), kar pomeni, da je med letoma 1998 in 2017, ko sta bila opravljena popisa prebivalstva, letna povprečna stopnja rasti znašala 2,40. Čeprav se je letna rast v primerjavi z obdobjem med popisoma v letih 1981 in 1998 zmanjšala, se je delež mestnega prebivalstva povečal z 32,5 % (1998) na 36,4 % (2017). To kaže na vse močnejšo urbanizacijo in zgoščanje prebivalstva v mestnih središčih. Mestni stanovanjski fond je pod čedalje večjim pritiskom, kar povzroča nenačrtno širjenje mestnega prostora. Nenadzorovana urbanizacija zato postaja velik izziv za lokalne pakistanske načrtovalske agencije (Ahmad in Anjum, 2012), ki so pripravile že številne razvojne načrte, da bi obvladale nastali položaj, vendar ti načrti postavljenih ciljev niso dosegli. Hameed in Nadeem (2008) sta kritično analizirala procese oblikovanja glavnih mestnih načrtov v Pakistanu in našla več razlogov za njihovo neuspešno izvajanje. Med glavnimi razlogi so bili preveliko zanašanje na sekundarne podatke, premalo zbranih primarnih podatkov in nezadostno sodelovanje javnosti. Posledično mnogi glavni načrti, ki se nanašajo na stanovanjski sektor (npr. določanje prihodnjih območij stanovanjske rasti), ne zadovoljujejo želja in potreb ljudi ter s tem ovirajo uspešno izvajanje razvojnih načrtov.

Razen osnovnih kvantitativnih stanovanjskih kazalnikov podatki iz popisov prebivalstva ne dajejo vpogleda v odločitve in preference ljudi pri izbiri lokacije doma. Poleg tega ni na voljo dovolj podatkov za proučevanje vloge prevoza in drugih s tem povezanih dejavnikov pri izbiri stanovanjske lokacije v Pakistanu (in drugih državah na globalnem jugu). V številnih prejšnjih raziskavah te problematike so avtorji ugotovili povezavo med grajenim okoljem in potovalnimi navadami mestnih prebivalcev, slabše pa je raziskan vpliv izbire stanovanja na povezavo med rabo prostora in prevozom (Cao idr., 2009). Glede na to, da je malo raziskovalnih izsledkov, ki bi se nanašali na Pakistan in druge države v razvoju, so primarni podatki še toliko nujnejši in na podlagi tega bi bilo treba zbrati primarne podatke o tej temi tudi za države v razvoju.

Cilj raziskave, navedene v tem članku, je bil zagotoviti zanesljive primarne podatke, na podlagi katerih bi lahko izvedli empirične analize, ki bi zajele izbire stanovanj v malih pakistanskih mestih. Omeniti je treba, da glede na splošno hipotezo raziskave mnenja in navade ljudi v malem pakistanskem mestu niso primerljivi s tistimi v podobno velikih mestih v Severni Ameriki, Evropi, Avstraliji itd. Odločilni razlog za razlike v vedenju ali navadah ljudi je kontekst, ne velikost. Kljub temu lahko v okviru pakistanskega ali južnoazijskega konteksta velikost mesta vpliva na vedenjska neskladja, ki so zaradi razlik v družbenogospodarskih razmerah in življenjskem slogu med velikimi in srednje velikimi mesti ter malimi mesti lahko precejšnja. Neskladja med različno velikimi mesti so v državah v razvoju lahko večja kot v državah z visokimi prihodki (to je treba preveriti in bi bila lahko hipoteza drugih raziskav). V raziskavi, navedeni v tem članku, avtorji obravnavajo pomanjkanje primarnih podatkov, primernih za proučevanje izbire stanovanjskih lokacij ne samo v malih, ampak tudi večjih pakistanskih mestih.

Avtorji so najprej orisali proučevani problem in raziskovalne cilje, nato pa so navedli prejšnje raziskave podobne problematike, opravljene na različnih območjih (večinoma v razvitih državah ter na Bližnjem vzhodu, v Severni Afriki in na indijski podcelini). V nadaljevanju so navedli raziskovalna vprašanja in hipotezo, značilnosti raziskovalnega območja, raziskovalne spremenljivke ter metode zbiranja in analize podatkov. Vsebina zajema še izsledke, izvedene na podlagi zbranih podatkov, ki se nanašajo na dva širša niza kategoričnih in zveznih spremenljivk, članek pa so sklenili z razpravo in sklepi raziskave.

2 Prejšnje raziskave

Izbira stanovanjske lokacije je del človekove samoizbire, pri čemer se ljudje navadno odločajo o tem, kje in kako bodo živeli, kam in kako bodo potovali ipd., na podlagi svojih potreb, preferenc in pogledov. Do zdaj je bila obravnavana v empiričnih raziskavah, ki so temeljile na primarnih podatkih, zbranih v raznih državah, kot so Nizozemska (Van der Vlist idr, 2002; Zondag in Pieters, 2005; Ettema in Nieuwenhuis, 2017), Nemčija (Heldt idr., 2016), Združeno kraljestvo (Kim idr., 2005), ZDA (Schwanen in Mokhtarian, 2004; Bayoh idr., 2006; Waddell idr., 2007; Cao idr., 2010; Pinjari idr., 2011; Sener idr., 2011; Wang idr., 2011; Patacchini in Arduini, 2016), Kanada (Fatmi idr., 2017), Japonska (Ge in Hokao, 2006; Zhang idr., 2014; Yu idr., 2017), Irska (Vega in Reynolds-Feighan, 2009; Humphreys in Ahern, 2017), Italija (Chiarazzo idr., 2014), Francija (Palma idr., 2005; Buczkowska in Lapparent, 2014), Danska (Næss, 2009) in Belgija (van Acker idr., 2014; Vos in Witlox, 2016). Raziskave so vključevale vse od pregledov literature (Van der Vlist idr., 2002), številskih analiz na pod-

Preglednica 1: Metode, uporabljene v podobnih predhodno izvedenih raziskavah (vir: avtorji)

Raziskava	Velikost vzorca	Stopnja odziva	Proučevano območje	Delež odziva	Metoda zbiranja podatkov
Ahmad, 1992	6.275 gospodinjstev, izbranih s kvazinaključnim vzorčenjem.	–	26 območij v Karačiju, določenih na podlagi družbeno-gospodarskih značilnosti in značilnosti sosesk.	Ni podatka.	Anketa o družbenogo-spodarskih razmerah, opravljena med letoma 1987 in 1988 po celotnem mestu.
Ahmad, 1993	6.275 gospodinjstev, izbranih s kvazinaključnim vzorčenjem.	–	26 območij v Karačiju, določenih na podlagi družbeno-gospodarskih značilnosti in značilnosti sosesk.	0,38 % (mesto)	Anketa o družbenogo-spodarskih razmerah, opravljena med letoma 1987 in 1988 po celotnem mestu.
Cao idr., 2006a	6.000 naključno izbranih gospodinjstev.	22,8 % (1.368)	Šest sosesk srednjega dohodkovnega razreda v Austinu v Teksasu, zgrajenih v treh obdobjih.	4,64 %	Anketa, poslana po pošti leta 1995.
Cao idr., 2006b	8.000 (6.746 veljavnih) sosesk, naključno izbranih iz poslovne podatkovne baze.	24,9 % (1.682)	Osem sosesk z različnimi značilnostmi, zgrajenih v severni Kaliforniji v dveh obdobjih.	1,74 %	Dva kroga anket, poslanih po pošti leta 2003.
Frank idr., 2007	Dva podvzorca: 2.088 (2.056 veljavnih) in 1.466 (1.455 veljavnih) gospodinjstev, izbranih iz podatkovne zbirke projekta SMARTRAQ.	30,4 %	Atlantsko metropolitansko območje, sestavljeno iz 13 okrožij.	Ni podatka.	Računalniško podprta telefonska anketa, opravljena leta 2001 in 2002.
Handy in Clifton, 2001	6.000 anketirancev in 75 intervjuvancev	22,8 % (1.368)	Šest sosesk srednjega dohodkovnega razreda v Austinu v Teksasu, zgrajenih v treh obdobjih.	4,64 %	Anketa, poslana po pošti leta 1995, in fokusna skupina, oblikovana leta 1997.
Ibrahim, 2017	224 gospodinjstev	–	Sedem stanovanjskih sosesk v Alexandriji	0,01 % (mesto)	Terenska anketa
Kitamura idr., 1997	5.472 naključno izbranih gospodinjstev	17,6 % (963)	Pet raziskovalnih območij v približni velikosti kvadratne milje v predelu San Francisco Bay	Ni podatka.	Anketa, poslana po pošti.
Painter, 1996	496 naključno izbranih pešcev	–	Tri podobne ulice in pešpot v Londonu	Ni podatka.	Ulična anketa, opravljena leta 1992.
Mokhtarian, 2003	8.000 gospodinjstev	25,0 % (2.000: 1.358 upoštevanih zaposlenih)	Tri soseske na območju San Francisco Bay	Ni podatka.	Anketa, poslana po pošti.

lagi podatkovnih zbirk popisov na državni (Zondag in Pieters, 2005) in mestni ali regionalni ravni (Wang idr., 2011; Vega in Reynolds-Feighan, 2009; Cao idr., 2010; Pinjari idr., 2011; Sener idr., 2011; Buczkowska in Lapparent, 2014; Heldt idr., 2016) in matematičnega modeliranja na podlagi primarnih podatkov (Schwanen in Mokhtarian, 2004; Kim idr., 2005; Bayoh idr., 2006; Ge in Hokao, 2006; Næss, 2009; Chiarazzo idr., 2014; van Acker idr., 2014; Zhang idr., 2014; Patacchini in Arduini, 2016; Vos in Witlox, 2016; Fatmi idr., 2017; Humphreys in Ahern, 2017; Yu idr., 2017) do statističnih analiz na podlagi podatkov, pridobljenih s simulacijo (Palma idr., 2005). Večina raziskav je bila opravljena na podlagi matematičnega modeliranja primarnih podatkov. Geografsko je bila večina raziskovalnih območij v ZDA, nekatere raziskave pa so obravnavale tudi države v razvoju, kot so Kitajska (Biying idr., 2012; Næss, 2013; Wu idr., 2013; Yang idr., 2013; Wang idr., 2016; Zhuge idr., 2016; Wang idr., 2018), Južna Koreja (Jun idr., 2013; Yi in Lee, 2014; Park in Kim, 2016), Tajska (Choocharukul idr., 2008), Vietnam (Tran idr., 2016), Čile (Balbontin idr., 2015) in Izrael (Frenkel idr., 2013).

Delež opravljenih raziskav, ki so zajemale izbire stanovanjskih lokacij na indijski podcelini, Bližnjem vzhodu in v Severni Afriki je zelo majhen. Razen nekaterih omembe vrednih izjem, kot so študije, izvedene v Indiji (Schwanen in Mokhtarian, 2003; Molugaram in Rao, 2005; Srinivasan, 2005; Lall idr.,

2006), Bangladešu (Choudhury in Ayaz, 2015), Iranu (Masoumi, 2013) in Egiptu (Ibrahim, 2017), je le malo raziskav poskušalo približati jasno sliko glede izbire lokacij stanovanj v tem delu sveta. Raziskav, ki bi se nanašale na Pakistan, skoraj ni. Zaradi pogostejšega proučevanja tovrstnih izbir v Indiji lahko izsledke indijskih raziskav posplošimo še za Pakistan, vendar bi bilo treba zaradi nekaterih ključnih razlik (večinoma povezanih z verskimi prepričanji) za Pakistan izvesti ločene študije. Izsledke ene izmed redkih raziskav, ki se nanašajo na Pakistan, je leta 1992 objavila Nuzhat Ahmad (Ahmad, 1992), ki je na podlagi podatkov ankete o družbenogospodarskih razmerah, opravljene v Karačiju med letoma 1987 in 1988, proučevala 6.275 gospodinjstev v navedenem mestu. Na podlagi analize teh podatkov je ugotovila, da je za določanje lokacijskih izbir in mobilnosti gospodinjstev pomembna etnična pripadnost družin. Poleg tega je ugotovila povezavo med navedenim ter nenačrtnima širjenjem in rastjo Karačija. Še eno raziskavo je izvedla Kerry M. Connor (1989) in ugotovila je, da etnografske vezi in vpletenost politike vplivajo na odločitve, povezane z izbiro lokacije stanovanja. Ti študiji, ki spadata med redke raziskave o Pakistanu, sta bili opravljeni že pred mnogimi leti in se le slabo ali se sploh ne navezujeta na potovalne navade mestnih prebivalcev.

Pregled preteklih raziskav kaže, da je bila ta tema proučevana predvsem s kvantitativnimi metodami in verjetnostnim vzorčenjem kot glavno metodo vzorčenja in pridobivanja anketirancev. V mnogih tovrstnih raziskavah so bili za določitev ciljne populacije in velikosti vzorca uporabljeni tudi vzorci, ki so že bili uporabljeni drugje (npr. v popisih prebivalstva, prejšnjih raziskavah in raznih podatkovnih zbirkah). Stanovanjske soseske so bile uporabljene kot glavna enota analize na različnih območjih. Glavni razlog za izbiro teh sosesk so bili podobnosti ali razlike v družbenogospodarskih značilnostih in obdobje, v katerem so bile te soseske zgrajene in naseljene. Uporabljena sta bila dva glavna pristopa k zbiranju podatkov: neposredno anketiranje na terenu in ankete, poslane po pošti. Omejitev, povezana z anketami, poslanimi po pošti, je nizka stopnja odziva, kar je razvidno tudi iz pregleda tovrstnih raziskav, saj v nobeni ni bila dosežena stopnja, višja od 33 % (glej preglednico 1). Delež odziva (delež anketirancev v celotnem številu prebivalcev soseske ali mesta) pa je bil med 1,74 % in 4,64 %. V preglednici 1 so povzeti izsledki nekaterih predhodnih raziskav.

3 Metodologija

V raziskavi, navedeni v tem članku, avtorji predpostavljajo, da je izbira stanovanja odvisna od konteksta, tj. da se ljudje v Pakistanu drugače odločajo, kjer bodo živeli, kot v drugih državah. Razlike v odločanju so večinoma povezane s kulturnimi vprašanji (vero, lokalnim življenjem in miselnostjo), družbenogospodarskimi razmerami (različni načini služenja denarja), družbenimi razredi in povezanostjo s prostorom ter geografskimi značilnostmi (podnebjem). Ti dejavniki lahko vplivajo na drugačne pristope k izbiri stanovanjskih lokacij v malih mestih v Pakistanu kot v razvitih državah ali državah z visokimi dohodki. Domneva temelji na hipotezi, da so povezave med mestnim prostorom in mestnimi potovalnimi navadami (v tem primeru vsakodnevno vožnjo v službo ali šolo) močno odvisne od konteksta, zato oblikovanje politike mestne mobilnosti ne more temeljiti na raziskavah ali konceptih, ki se izvajajo in uporabljajo v državah z visokimi dohodki, ampak na lokalnih raziskavah. V raziskavi so navedeni podatki, ki dajejo osnovo poglobljenim analizam v prihodnjih raziskavah. Glavno vprašanje je, kako Pakistanci v malih mestih izbirajo lokacijo svojega stanovanja.

3.1 Proučevana območja

Življenje v velikih mestnih središčih je skupek najrazličnejših procesov, zaradi katerih je iz empiričnih raziskav, opravljenih na urbanih območjih, zelo težko izluščiti zanesljive izsledke. Izvajanje empiričnih raziskav v velikih mestnih središčih zahteva veliko napora in sredstev, da se zagotovijo zanesljive ugotovitve. Po drugi strani mala mesta omogočajo zanesljive analize manj kompleksnega mestnega življenja na podlagi oblikovanega raziskovalnega okvira. Številne osnovne dejavnike je tako lažje proučevati kot v velikih mestnih središčih. Na podlagi opisanega je bilo za raziskavo izbrano mestece Hafizabad v osrednjem delu pakistanske regije Pundžab, v katerem je leta 2017 živelo 245.784 prebivalcev (glej sliko 1). Na podlagi zadnjega popisa prebivalstva (Government of Pakistan, 2017) je v Hafizabadu 37.270 stanovanjskih enot, posamezno gospodinjstvo pa v povprečju obsega 6,6 osebe, kar je skoraj enako državnemu povprečju, ki znaša 6,5 osebe.

Najbližje večje mesto je Gudžranvala (število njegovih prebivalcev je leta 2017 znašalo 2,03 milijona), ki je 55 km proti vzhodu. Hafizabad je z njim močno povezan in med mestoma poteka dnevna migracija, čeprav samo v omejenem obsegu. Istoimensko okrožje Hafizabad je znano po pridelavi riža in bombaža, mesto Hafizabad kot njegov sedež pa ponuja zaposlitvene možnosti tudi okoliškim prebivalcem, ki se dnevno vozijo v mestno središče (Naeem in Ahmad, 2018). Med večjimi mesti v bližini sta še Lahore (11,13 milijona prebivalcev leta 2017) 102 km proti jugovzhodu in Faisalabad (3,2 milijona prebivalcev leta 2017) 106 km proti jugozahodu, s katerima ima Hafizabad prav tako vzpostavljene družbenogospodarske povezave.

Čeprav zgodovinski viri, ki se nanašajo na območje današnjega mesta Hafizabad, segajo vse do leta 327 pr. n. št., ko je Aleksan-

Slika 1: (a) Lokaciji Hafizabada v Pakistanu (vir: Google Maps, 2019) in (b) lokacija v regiji (vir: Google Maps, 2019).

der Veliki vdrl v Pundžab (Government of the Punjab, 2018), je mesto ustanovil šele Hafiz Meerak, ljubljenec mogulskega cesarja Akbarja I., ki je vladal med letoma 1542 in 1605. V starem, osrednjem delu mesta so zato še vedno vidne nekatere prvine mogulske mestne arhitekture iz 16. stoletja. Po padcu mogulskega cesarstva je bila celotna indijska podcelina do leta 1947 pod britansko kolonialno oblastjo. To obdobje je z viktorijansko arhitekturo pustilo neizbrisen pečat na tkivu mest v regiji Pundžab. Enako velja tudi za Hafizabad, kjer so v osrednjem delu še danes vidni ostanki mestne kolonialne arhitekture. Ta arhitekturna plast je del mestnega grajenega okolja iz obdobja pred odcepitvijo od Indije leta 1947. Po osamosvojitvi Pakistana se je večina hindujskih in sikhovskih prebivalcev preselila v Indijo, številni muslimani pa so se iz Indije preselili v Hafizabad. Te demografske spremembe so preobrazile mestno krajino, v kateri se je pojavila arhitektura, značilna za obdobje po odcepitvi (tj. od osamosvojitve do poznih devetdesetih let 20. stoletja). V okviru pakistanske državne stanovanjske politike, sprejete leta 2001, je bil stanovanjski sektor razglašen za prednostno področje, kar je spodbudilo razcvet nepremičninskega trga. Pri tem mala mesta, kot je Hafizabad, niso bila nobena izjema, spopadala pa so se tudi s posledicami nenačrtnega širjenja mestnega prostora v obliki stanovanjske gradnje zunaj meja mestnih občin, čeprav manj kot v večjih mestih. To je povzročilo nastanek tretje arhitekturne plasti v mestu: novejših načrtovanih stanovanjskih sosesk in ograjenih skupnosti. Različne zgodovinske arhitekturne plasti v Hafizabadu so prikazane na sliki 2.

Z določitvijo različnih arhitekturnih plasti v mestu so lahko avtorji izbrali soseske za raziskavo na podlagi razlik v grajenem okolju. Razlike v urbani strukturi se deloma kažejo tudi v družbenogospodarskem položaju prebivalcev. Mesto se je večinoma širilo proti jugu, kjer so nastajale novogradnje, vključno z načrtovanimi stanovanjskimi soseskami. Za podrobnejšo raziskavo so bile izbrane štiri soseske v Hafizabadu z značilno urbano strukturo: dve v starejšem osrednjem delu mesta, ena v severnem delu mesta s polpravilno ulično mrežo in novejša soseska v južnem delu mesta. Urbana struktura teh štirih sosesk in podrobnosti o razpoložljivi infrastrukturi v njih so prikazane v preglednicah 2 in 3, njihova lokacija v mestu pa na sliki 3. Urbana struktura in razpoložljiva infrastruktura v vsaki soseski sta prikazani na sliki 4.

3.1 Podatki, spremenljivke in analiza

Anketa je bila razdeljena na tri dele: informacije o posameznih gospodinjstvih in njihovem družbenogospodarskem položaju, značilnosti trenutne stanovanjske enote in značilnosti povpraševanja po stanovanjih. Vprašalnik je vključeval 16 vprašanj, izmed katerih so nekatera lahko vsebovala več podvprašanj. Šest vprašanj se je nanašalo na posameznika (njegovo starost, spol, zakonski stan, zaposlitev ter čas in oblika vsakodnevne poti v službo ali šolo), deset pa na posamezno gospodinjstvo (lastništvo vozila, vrsta stanovanja, razlog za izbor trenutnega bivališča, datum selitve, glavni razlog za selitev, lastništvo dodatne stanovanjske enote, število stanovanj v lasti, ali so prazna ali zasedena, vrsta posesti stanovanja, vrednost enote, višina najemnine, iskanje novega stanovanja, zaželena soseska, glavni razlog za izbor stanovanjske lokacije in zaželena oblika stanovanjske posesti). Razen števila stanovanj v lasti so vse spremenljivke kategorične. Vprašalnike so izpraševalci izpolnili med intervjuvanjem anketirancev.

V anketi so bili pridobljeni zelo natančni podatki o posamezni soseski. Velikost vzorcev in ocenjeni intervali zaupanja so bili

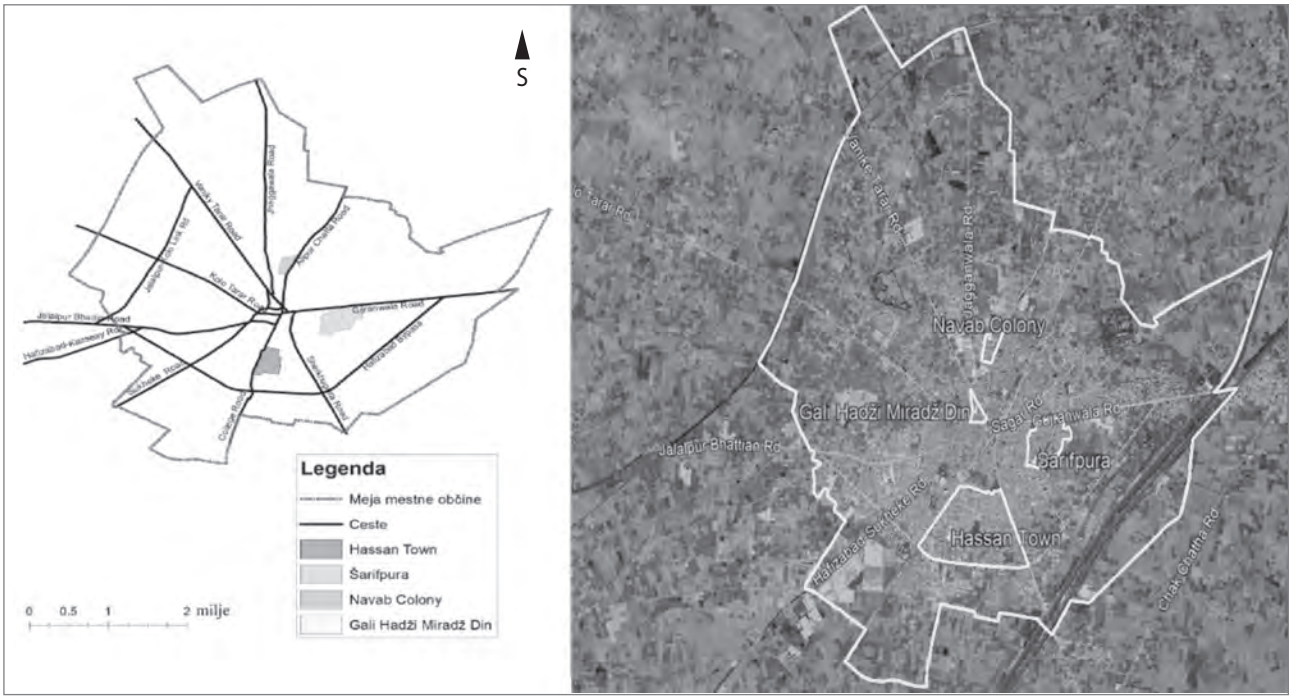
Slika 2: Različne arhitekturne plasti v Hafizabadu (foto: Anwaar ul Haq)

Preglednica 2: Štiri proučevane soseske

Št.	Soseska	Obdobje	Ulična mreža	Št. prebivalcev (2018)	Bruto površina (v ha)	Neto površina (v ha)	Bruto gostota prebivalstva/ ha	Neto gostota prebivalstva/ ha
1	Gali Hadži Miradž Din	Pred letom 1947	Nenačrtovana	3.584	5,5	4,9	649,11	730,54
2	Šarifpura	Pred letom 1947	Nenačrtovana	3.298	31,5	27,4	104,64	120,26
3	Navab Colony	1947–2000	Polpravilna	4.299	8,9	6,8	484,88	636,74
4	Hassan Town	Po letu 2000	Pravilna	7.861	22,7	20,1	346,73	514,64

Preglednica 3: Urbana struktura izbranih sosesk

Št.	Soseska	Prometne povezave	Vozlišča	Razmerje med prometnimi povezavami in vozlišči	Gostota križišč (št. vozlišč/ha)	Infrastruktura				Infrastruktura na prebivalca
						Trgovine	Zdravstvo	Verske zgradbe	Skupno	
1	Gali Hadži Miradž Din	66	59	1,12	10,73	43	1	–	44	0,012
2	Šarifpura	190	168	1,13	5,33	119	–	–	119	0,036
3	Navab Colony	44	35	1,26	3,93	66	–	1	67	0,016
4	Hassan Town	83	45	1,84	1,98	72	–	1	73	0,009



Slika 3: Lokacija proučevanih sosesk v Hafizabadu (slika: avtorji)

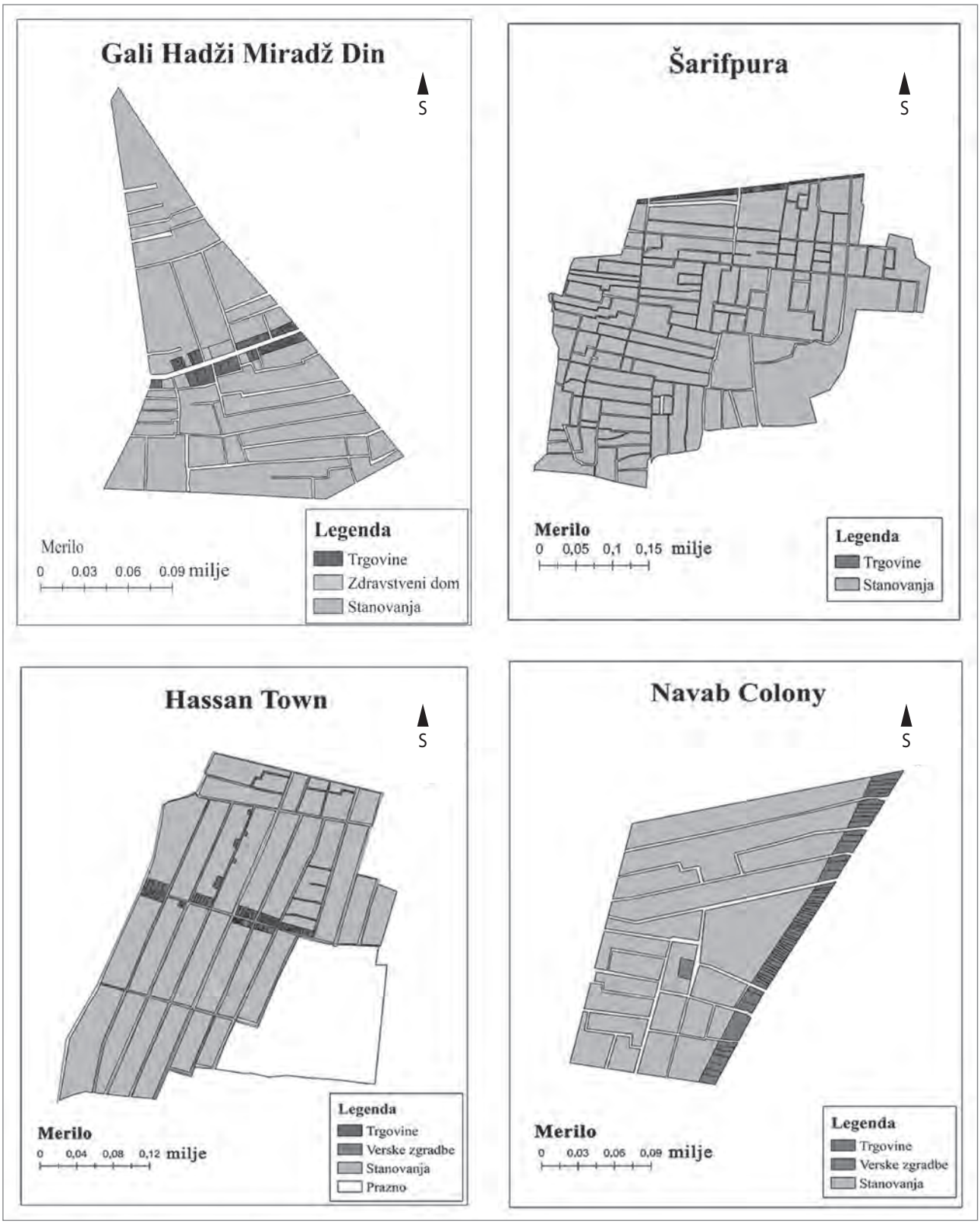
povzeti po Cochranu (1963), pri čemer so bili ti izračunani ločeno za vprašanja, ki so se nanašala na posameznike, in ločeno za vprašanja, ki so se nanašala na gospodinjstva. Intervali zaupanja za gospodinjstva so bili izračunani na podlagi povprečne velikosti gospodinjstev v mestu (tj. 6,6 osebe na podlagi podatkov popisa iz leta 2017. Posledično je bilo anketiranih 1,9 % od skupno 19.042 prebivalcev vseh štirih proučevanih sosesk (*N*). Pri delu vprašalnika, ki se je nanašal na gospodinjstva, so bili zbrani podatki za 12,7 % vseh mestnih gospodinjstev. Interval zaupanja je tako pri posameznikih znašal ±5,1 %, pri gospodinjstvih pa ±4,8 %. Intervali zaupanja za posamezne proučevane soseske so navedeni v preglednici 4, kjer so na podlagi skupnega vzorca 365 anketirancev povzete tudi velikosti vzorcev pri vsakem vprašanju.

Analiza je vključevala določitev frekvence odgovorov, ki so se nanašali na kategorične spremenljivke, in opisno statistiko, ki se je nanašala na število stanovanj v lasti (edino zvezno spremenljivko). Avtorji so jo opravili po validaciji in popravku rezultatov (rezultate so popravili predvsem pri soseski Navab Colony, pri kateri so nekatere vhodne podatke zaradi neustreznosti izločili iz vzorca).

4 Rezultati

V nadaljevanju so povzeti skupni izsledki, ki se nanašajo na kategorične kazalnike za vse štiri proučevane soseske. 45 % anketirancev je bilo starih med 36 in 45 let, med vsemi pa je bilo kar 84 % moških, saj je bilo zaradi kulturnih razlik v raziskavi težko uravnotežiti število moških in žensk. Podobno kot delež anketirancev srednjih let sta bila velika tudi deleža poročenih (82 %) in redno zaposlenih (78 %).

Podobno kot pri mnogih drugih raziskavah, opravljenih v sosednjih državah in bližnjih regijah, je bil poudarek na gospodinjskem, in ne posameznikovem lastništvu vozil. V kulturah, kot je pakistanska, je namreč verjetneje, da si člani gospodinjstva vozila med seboj delijo. Tako je imelo 56 % gospodinjstev, vključenih v anketo, v lasti po en motocikel, 22 % jih je bilo brez avtomobila, 5 % pa jih je imelo v lasti po en avtomobil. Velik delež gospodinjstev (87 %) je imel v lasti hiše, ki so jih sami zgradili, samo 12 % pa jih je živelo v najemniških stanovanjih ali hišah. Kot je bilo za tako malo pakistansko mesto tudi pričakovati, je 41 % gospodinjstev (npr. mladi pari) živelo v isti hiši kot starši in drugi sorodniki, kar je bil tudi najpomembnejši razlog za izbiro trenutnega bivališča. Bivanje v družinski hiši je poleg tega povezano s še dvema, malo manj pomembnima razlogoma: 16 % se jih je za trenutno bivališče odločilo, ker je v prijetni soseski, 14 % pa se jih je tako odločilo zaradi cenovne ugodnosti. Velik delež anketirancev (73 %) je do službe ali šole potreboval manj kot 30 minut, pri čemer so do tja najpogosteje pešačili (40 %) ali so se peljali z motociklom (40 %). Več kot tretjina gospodinjstev se je v času izvajanja ankete preselila in avtorji so prav na tem vzorcu proučevali razloge za selitev in izbiro stanovanjske lokacije. Največ gospodinjstev (42 %) se je



Slika 4: Namenska raba prostora v izbranih soseskah (slika: avtorji)

Preglednica 4: Značilnosti raziskovalnega vzorca na ravni sosesk in skupni vzorec

Soseska	Popisni okoliš	Št. prebivalcev	Št. gospodinjstev*	Št. anketiranih oseb	Velikost vzorca, potrjen na ravni sosesk (*n*)	Odziv na vprašanja o posameznikih (v %)	Odziv na vprašanja o gospodinjstvih (v %)	Interval zaupanja pri vprašanjih o posameznikih (v %)	Interval zaupanja pri vprašanjih o gospodinjstvih (v %)
Hassan Town	12	7.861	1.191	100	100	1,27	8,40	9,74	9,38
Šarifpura	10	3.298	500	100	100	3,03	20,00	9,65	8,77
Gali Hadži Miradž Din	6	3.584	543	100	100	2,79	18,42	9,66	8,86
Navab Colony	5	4.299	651	98	65	1,51	9,98	12,06	11,54
Skupni vzorec	–	19.042	2.885	398	365	1,92	12,65	5,08	4,79

Opomba: * Izračunano na podlagi povprečne velikosti gospodinjstev v Hafizabadu (6,6 osebe)

zadnjič preselilo pred dvema do desetimi leti. Za 15 % anketirancev je bil najpomembnejši razlog za izbor nove lokacije vrsta bivališča ali soseska, 65 % pa jih na to vprašanje sploh ni odgovorilo, saj se pred tem še nikoli niso preselili. Prevoz skoraj za nobeno anketirano gospodinjstvo ni bil razlog za selitev (0,27 %) in samo 18 % gospodinjstev je imelo v lasti še eno bivališče. V približno polovici teh bivališč je nekdo živel. Samo 11 % gospodinjstev je živelo v najemu, preostala pa so živela v svoji hiši. Vrednost več kot polovice teh hiš je znašala med 1,5 in 3 milijoni PKR. Od 11 % gospodinjstev, ki so imela hišo v najemu, jih je 68 % za najemnino plačevalo manj kot tretjino svojega dohodka. V prihodnosti namerava 28 % gospodinjstev poiskati novo hišo. Več kot polovica jih želi še naprej živeti v isti soseski, 45 % pa jih bo stanovanje iskalo v drugi soseski v Hafizabadu. Preostalih 5 % jih želi Hafizabad zapustiti in se preseliti v drugo mesto, najverjetneje Lahore. Dobre storitve in komunalna oprema v soseski so najpomembnejši razlog za selitev za 23 % gospodinjstev, na drugem mestu pa je dostopna cena (za 20 % anketirancev). Bližino delovnega mesta je kot razlog za selitev navedlo 17 % gospodinjstev, 91 % pa bi se jih v prihodnosti najraje preselilo v lastno hišo.

Zgoraj opisani podatki se nanašajo na celoten vzorec anketirancev iz vseh štirih proučevanih sosesk. Za boljše razumevanje vloge različnih urbanih struktur in okolij na odločitve anketirancev v posamezni soseski so avtorji odgovore, povezane s kategoričnimi spremenljivkami, analizirali ločeno za vsako proučevano sosesko in jih ponazorili z grafi. Nekateri izmed njih so prikazani na sliki 6. Najmlajši anketiranci so prihajali iz soseske Hassan Town (44 %), anketiranci iz sosesk Gali Hadži Miradž Din in Šarifpura pa so bili starejši (25 % jih je bilo starih 46 let ali več). Največji delež žensk je prihajal iz soseske Hassan Town (32 %), najmanjši delež neporočenih anketirancev pa je prihajal iz soseske Navab Colony (28 %). Soseska Gali Hadži Miradž Din je imela največji delež zaposlenih s polnim delovnim časom (84 %), največji delež posameznikov, ki so imeli v lasti motocikel (62 %), in največji delež lastnikov avtomobilov. Delež samozgrajenih hiš je podoben v treh izmed štirih sosesk (Gali Hadži Miradž Din, Šarifpura in Hassan Town), in sicer od 86 do 88 %, največji delež podnajemnikov pa je prihajal iz soseske Gali Hadži Miradž Din (10 %). Največ anketirancev v celotnem vzorcu je živelo v družinski hiši skupaj s starši in drugimi sorodniki. Cenovna dostopnost, bližina delovnega mesta in prijetna soseska so najpomembnejši dejavniki, zaradi katerih anketiranci prebivajo na trenutni lokaciji, socialno-kulturni status anketirancev, ki so navedli te tri razloge, pa je malce drugačen od statusa drugih anketirancev v celotnem vzorcu. Najkrajšo pot v službo ali šolo so imeli anketiranci v soseski Hassan Town, pri čemer jih je 79 % navedlo, da jim vzame manj kot pol ure. Ta delež v soseski Navab Colony pade na 67 %, v tej soseski tudi najmanj ljudi v službo ali šolo hodi peš (28 %). Polovica gospodinjstev v soseski Hassan Town se je že preselila, v soseski Šarifpura pa je to do zdaj storilo samo 27 % gospodinjstev. Več kot polovica gospodinjstev v soseski Navab Colony se je preselila v zadnjih dveh letih, 40 % gospodinjstev v soseski Gali Hadži Miradž Din pa se je preselilo že pred več kot desetimi leti. Dejavniki, povezani s prevozom, so bili pomembni samo za 1,5 % gospodinjstev v soseski Navab Colony, v drugih pa niso bili razlog za selitev. Dodatno stanovanjsko enoto ima v lasti največ anketirancev v soseski Navab Colony (28 %), v vseh štirih soseskah pa ima skoraj enak delež anketirancev v lasti hišo, v kateri stanujejo (88–90 %). Po navedbah anketirancev so najcenejše hiše v soseski Hassan Town (29 %), najdražje pa v soseski Navab Colony (16 %). V soseski Hassan Town 91 % anketirancev zapravi manj kot tretjino svojega dohodka za najemnino. Največji delež gospodinjstev, ki se nameravajo preseliti, je v Šarifpuri (32 %). 41 do 54 % vseh anketiranih gospodinjstev namerava ostati v isti soseski tudi v prihodnje, pri čemer so gospodinjstva v soseski Hassan Town pokazala najmanj zanimanja za selitev drugam (37 %). Za gospodinjstva, ki se želijo preseliti v drugo mesto, je bolj verjetno, da bodo za

Povprečna stanovanjska površina		Veljavni podatki		Manjkajoči podatki		Skupno
	N	Odstotek	*N*	Odstotek	*N*	Odstotek
	350	95,9 %	15	4,1 %	365	100,0 %
Opisna statistika						
Aritmetična sredina		Statistika	122,33	Stand. odklon	Statistika	50,183
		Stand. napaka	2,682		Stand. napaka	–
95-odstotni interval zaupanja pri aritmetični sredini	Spodnja meja	Statistika	117,06	Najmanjši	Statistika	20
	Zgornja meja		127,61		Stand. napaka	–
5-odstotna modificirana aritmetična sredina		Statistika	118,49	Največji	Statistika	379
		Stand. napaka	–		Stand. napaka	-
Mediana		Statistika	126,00	Razpon	Statistika	359
		Stand. napaka	–		Stand. napaka	–
Varianca		Statistika	2518,302	Kvartilni razpon	Statistika	37
		Stand. napaka	–		Stand. napaka	–
Sploščenost		Statistika	3,989	Asimetrija	Statistika	1,428
		Stand. napaka	0,260		Stand. napaka	0,130
Test normalnosti						
Kategorija		Kolmogorov-Smirnov			Shapiro-Wilk	
	Statistika	df	*p*	Statistika	df	*p*
	0,242	350	< 0,001	0,875	350	< 0,001

Slika 5: Opisna statistika in test normalne porazdelitve za stanovanjsko površino anketirancev

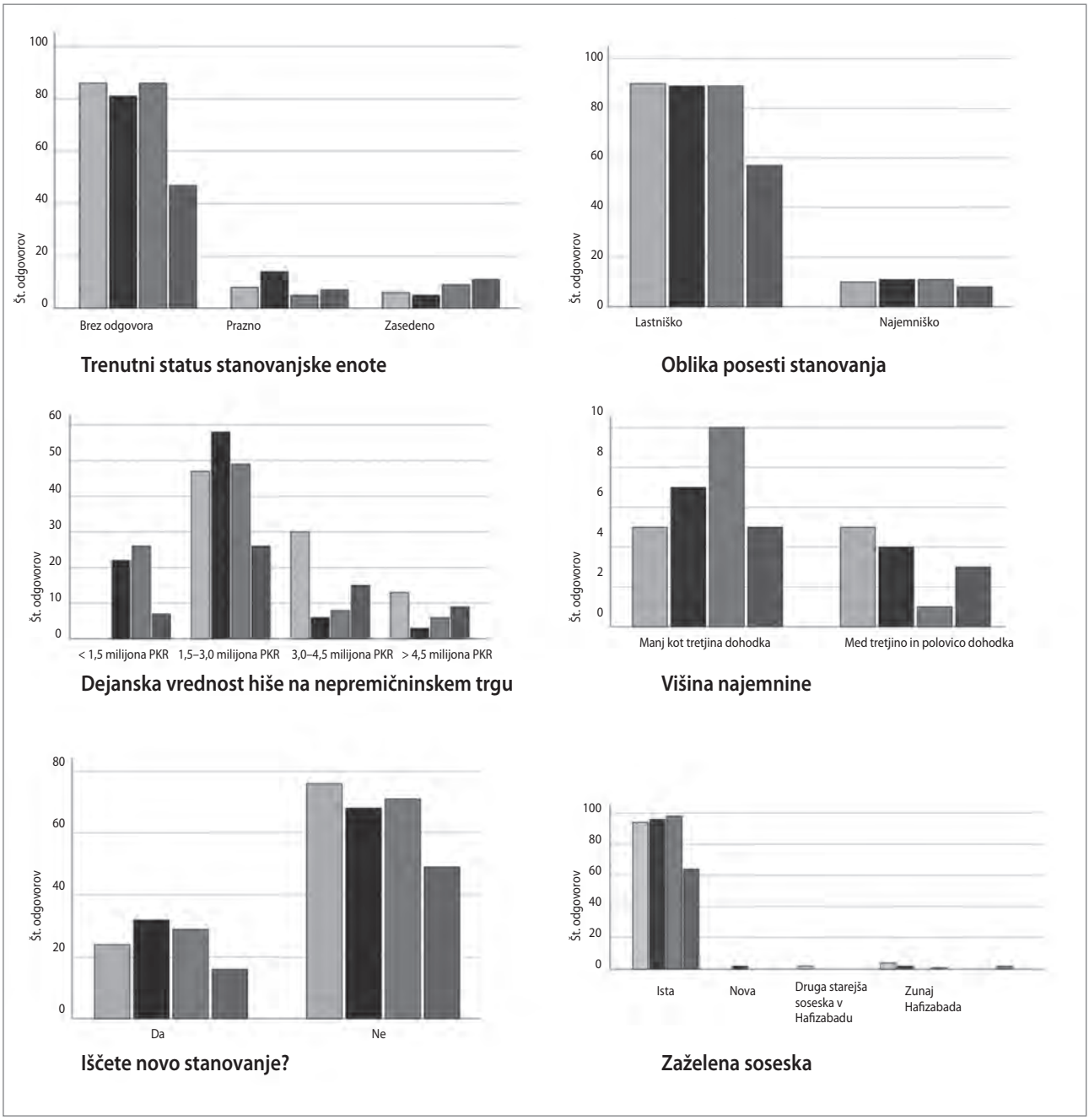
to izbrala Lahore kot pa katero drugo, bolj oddaljeno mesto. V soseski Gali Hadži Miradž Din je najpomembnejši razlog za izbiro lokacije prihodnjega stanovanja razpoložljivost storitev in komunalne infrastrukture (31 %), v Šarifpuri pa so glavni razlogi za to cenovna dostopnost (22 %), razpoložljivost storitev in komunalne infrastrukture (21 %) ter bližina prijateljev in sorodnikov (20 %). Cenovna dostopnost (30 %) in bližina delovnega mesta (29 %) sta daleč najpomembnejša razloga v soseski Hassan Town, v soseski Navab Colony pa anketiranci iščejo predvsem lokacijo z ustreznimi storitvami in komunalno infrastrukturo (29 %) ter mirnim okoljem (23 %). Med 85 in 99 % anketirancev iz vseh štirih sosesk bi se rado v prihodnje preselilo v hišo, ki bi bila v njihovi lasti.

Anketa je vključevala samo eno zvezno spremenljivko: stanovanjsko površino v lasti posameznega gospodinjstva. Opisni statistični podatki, povezani s tem vprašanjem, so prikazani na sliki 5. Od skupno 365 anketiranih gospodinjstev jih je na to vprašanje odgovorilo 350. Površine so različne, od 20 m^2 do 379 m^2, povprečna površina je 122,3 m^2, standardna napaka pa je znašala le 2,68 m^2. Razpon površin je tako velik, ker je nekaj gospodinjstev poročalo tudi o tako veliki površini, kot je 359 m^2. Rezultati Kolmogorov-Smirnovega in Shapiro-Wilkovega testa so pokazali, da so vrednosti statistične značilnosti *p* nižje od 0,001, kar pomeni, da porazdelitev ni normalna.

5 Razprava

Kot že veliko dosedanjih raziskav te problematike so tudi v tej raziskavi avtorji uporabili kvantitativne metode, s katerimi so proučevali odločitve prebivalcev Hafizabada glede lokacije svojega stanovanja. Kot v prejšnjih raziskavah je bila tudi v tej raziskavi soseska izbrana za osnovno enoto analize. Podatki iz popisa prebivalstva v soseskah Hafizabada so bili uporabljeni kot okvir za vzorčenje. Kot pri večini podobnih dosedanjih študij je izbor štirih sosesk v mestu temeljil na razlikah v urbani strukturi in obdobjih, v katerih so bile zgrajene. Ker je bila v literaturi nakazana nizka stopnja odziva na metode posrednega zbiranja podatkov (tj. anket, poslanih po pošti), so se avtorji raje odločili za neposredno anketiranje na terenu. Stopnja odziva je znašala 1,92 % in je podobna stopnjam, doseženim v prejšnjih raziskavah, opravljenih v razvitem svetu. Iz razprave v nadaljevanju je razvidno, da je izbrana metodologija skladna z metodologijo, uporabljeno v številnih prejšnjih raziskavah podobne tematike v razvitih državah, kar kaže na zanesljivost izsledkov te raziskave.

Izsledki razkrivajo, da je za večino anketirancev, ki imajo v lasti hišo, ki so jo sami zgradili in v njej živijo že več kot dve leti, glavni razlog za to, da v njej živijo, dejstvo, da je v lasti njihove družine. Velik delež lastniških stanovanj ali hiš v Pakistanu je



Slika 6: Izbrani grafi, ki prikazujejo frekvence odgovorov na analizirana vprašanja v štirih soseskah (vir: avtorji)

v ostrem nasprotju z razvitim svetom. Povečan delež lastniških stanovanj zmanjšuje splošno stanovanjsko mobilnost, posledično pa ima za večino anketirancev družinsko stanovanjsko premoženje odločilno vlogo pri odločanju o tem, kjer bodo živeli. Lastništvo hiše v pakistanski družbi kaže družbenogospodarski položaj, kar ljudi odvrača od najema stanovanj. Tudi sistem razširjenih družin kot prevladujoč način življenja številnih gospodinjstev v državah v razvoju je lahko razlog za to, da se ljudje raje odločajo za to, da bodo živeli v stanovanju ali hiši, ki je v lasti njihove družine. Ti izsledki se ne ujemajo z ugotovitvami raziskav, opravljenih v razvitem svetu.

Bližina delovnega mesta se ni izkazala za enega glavnih razlogov za izbiro trenutne stanovanjske lokacije. To je lahko posledica majhnosti mesta, v katerem v nasprotju z večjimi mesti večina služb ni daleč od posameznikovega doma. Približno tri četrtine anketirancev do službe potrebuje manj kot pol ure, pri čemer jih približno 40 % najraje pešači. To kaže na dobro ravnovesje med številom stanovanj in delovnih mest ter bi bilo lahko reprezentativno tudi za druga mala mesta v Pakistanu, ki so večinoma nastala organsko, brez načrtovanja. Poleg tega je to lahko razlog, zakaj bližina službe ni med glavnimi dejavniki, ki vplivajo na izbiro stanovanjske lokacije v malem mestu. To do-

datno potrjuje ugotovitev, da prevoz ni bil odločilni dejavnik za nobeno od gospodinjstev, ki so se v preteklosti že preselila. Ti izsledki se ne ujemajo z izsledki raziskav, opravljenih v razvitem svetu. Avtorji so podobno raziskavo (še neobjavljena) opravili tudi v Lahoreju (tj. večjem mestnem središču), kjer so ugotovili, da je povprečna oddaljenost delovnega mesta od stanovanjske soseske 8,4 km. Če bi tudi med gospodinjstvi v tem mestu proučevali dejavnike, ki vplivajo na izbiro stanovanjske lokacije, bi verjetno dobili drugačne rezultate. Majhen pomen prevoza ali oddaljenosti delovnega mesta pri izbiri lokacije stanovanja v malih mestih kaže, da močan premik k tranzitno usmerjenemu razvoju morda ne bi bila pametna strategija za mala mesta v državah v razvoju.

Druga pomembna ugotovitev te raziskave je povezana z nameravano preselitvijo v drugo mesto. Čeprav delež prebivalcev, ki se nameravajo izseliti iz mesta, znaša samo 5 %, je ugotovitev, da se ljudje želijo preseliti v večja mesta, zlasti Lahore, pomembna. Čeprav razlogi za to niso znani, bi morale pristojne občinske službe poskušati oblikovati politiko, ki bi zajezila urbanizacijo v večjih pakistanskih mestih. Lahore je že tako prenatrpan, nadaljnje priseljevanje iz bližnjih manjših mest pa bo razmere samo še poslabšalo in še bolj obremenilo obstoječo infrastrukturo.

Glavna omejitev raziskave je povezana z dejstvom, da se je samo tretjina anketirancev v preteklosti že preselila in je tako lahko povedala, kaj je bil odločilni dejavnik pri izbiri lokacije njihovega stanovanja. Vzrok za tako majhen delež je visoka stopnja stanovanjskega lastništva v Pakistanu. Avtorji so preostale anketirance spraševali o tem, ali se v prihodnje nameravajo preseliti in kateri so odločilni dejavniki, ki bodo vplivali na njihovo izbiro stanovanjske lokacije. Izkazalo se je, da samo četrtina anketirancev išče novo stanovanje. Poleg tega so se odgovori na ta vprašanja nanašali na nedoločen čas v prihodnosti, zaradi česar obstaja možnost, da bodo ob dejanski preselitvi drugačni. Opisano pomanjkljivost zbranih podatkov so avtorji odpravili tako, da so anketirance povprašali o njihovih trenutnih namerah glede preselitve, zaradi česar navedena omejitev ne bo imela večjega vpliva na zanesljivost izsledkov.

6 Sklep

Metodologija navedene raziskave je bila skrbno oblikovana in se ujema z metodologijo, uporabljeno v številnih tovrstnih prejšnjih raziskavah, opravljenih v razvitem svetu. Zaradi velikega deleža lastniških domov v Pakistanu je bil glavni dejavnik, ki je vplival na izbiro lokacije stanovanja, trenutno stanovanjsko premoženje družine. Dostop do prometne infrastrukture in bližina delovnega mesta se nista izkazala za pomembna dejavnika, kar je lahko posledica majhnosti Hafizabada. Poleg tega je ta ugotovitev povezana tudi z dejstvom, da so mala pakistanska mesta kompaktnejša, gosteje pozidana in imajo dobro ravnovesje med številom služb in stanovanj v primerjavi z večjimi mesti. Na podlagi teh ugotovitev lahko odgovorne oblasti bolje oblikujejo urbanistično in prometno politiko ter s tem dosežejo cilje tranzitno usmerjenega razvoja, učinkovito rešujejo vprašanja, povezana s socialnimi stanovanji, in obvladujejo urbanizacijo v večjih mestih. Raziskava kaže, da v malem mestu z 245.784 prebivalci (po podatkih iz leta 2017) dejavniki, povezani s prevozom, nimajo pomembne vloge pri izbiri stanovanjske lokacije. Stanje v velikih mestnih središčih pa je lahko drugačno in bi ga bilo treba temeljiteje proučiti, zaradi česar bi bilo treba tudi v večjih mestih izvesti podobne raziskave. V raziskavi, navedeni v tem članku, so rezultati ankete omenjeni samo opisno, za določitev povezav med spremenljivkami in za nadaljnjo potrditev končnih izsledkov pa so potrebne nadaljnje empirične raziskave. Avtorji predlagajo, da se podobne raziskave opravijo tudi v drugih malih mestih v državah v razvoju, pri čemer bi moral biti poseben poudarek na mlajših prebivalcih in zlasti mlajših parih ali družinah, saj bodo njihove odločitve pomembno vplivale na prihodnje potovalne navade mestnih prebivalcev.

Atif Bilal Aslam, Department of City and Regional Planning, University of Engineering and Technology Lahore, Pakistan
E-naslov: atif.aslam@uet.edu.pk

Houshmand E. Masoumi, Centre for Technology and Society, Technical University of Berlin, Nemčija
E-naslov: masoumi@ztg.tu-berlin.de

Nida Naeem, Department of City and Regional Planning, University of Engineering and Technology Lahore, Pakistan
E-naslov: nida.naeem64@yahoo.com

Mohammad Ahmad, Department of City and Regional Planning, University of Engineering and Technology Lahore, Pakistan
E-naslov: ahmadnoul786@gmail.com

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Vladimir KHALIN
Natalie KIELY

Degradacija ali regeneracija? Perspektive razvoja stika pristanišča z mestom v Odesi

Iskanje najboljše strategije trajnostnega razvoja je glavni cilj lokalnih oblasti in inovativnih urbanistov po vsem svetu. Zaradi različnih pogledov in interesov so posegi na stiku pristanišča z mestom in obsežna regeneracija mestnega nabrežja med najzapletenejšimi urbanističnimi nalogami. Za sodobno mesto ima razvoj pristanišča nedvomno največje ekološke, družbene in prometne posledice in koristi. Največja svetovna morska pristanišča selijo tovorne terminale iz starih mestnih jeder in prevzemajo naprednejše funkcije, ki niso povezane s pomorstvom, projekti, pri katerih je delež zasebnih in javnih površin enakovreden, pa dobivajo čedalje večji zagon. Najopaznejši projekti umikanja tovornih pristanišč iz starih mestnih jeder in regeneracije pristaniških območij potekajo v evropskih mestih. Za boljše razumevanje različnih uporabljenih pristopov so v članku predstavljeni primeri regeneracije pristanišč v Bilbau, Barceloni in Oslu, ki omogočajo vpogled v izkušnje, pridobljene na različnih krajih in v različnih načrtovalskih razmerah. V raziskavi, predstavljeni v tem članku, se avtorja osredotočata na ukrajinsko pristaniško mesto Odesa, pri čemer poskušata določiti najuspešnejšo strategijo razvoja stika pristanišča z mestom v trenutnih gospodarskih in geopolitičnih razmerah. Z združevanjem zamisli in raziskav urbanistov s področja upravljanja, ekonomije in prometne geografije ter upoštevanjem politik in sociooloških vidikov prispevata k boljšemu poznavanju in razumevanju te problematike, na podlagi česar se lahko zagotovi trajnostni razvoj obalnih mest držav v razvoju.

Ključne besede: regeneracija mest, stik pristanišča z mestom, projekti regeneracije mestnih nabrežij, pristanišče v Odesi, Ukrajina

1 Uvod

Splošen cilj sodobne regeneracije pristanišč po svetu je okrepiti konkurenčni razvoj pristaniških mest. Zaradi globalizacije gospodarstva, ki se osredotoča na storitveni sektor, pristaniška mesta postajajo glavni akterji v boju za gospodarsko prevlado. Obmorska mesta se praviloma spreminjajo v laboratorije, namenjene regeneraciji mestnih nabrežij. Nabrežja vodilnih pristaniških mest se iz industrijskih con in pristaniških terminalov 20. stoletja preobražajo v stanovanjska, trgovska, turistična in rekreativna območja. Taka mesta ponujajo nove priložnosti za vključevanje inovativnih zamisli in uporabo najdragocenejšega obalnega dela mestnega središča (Hoyle, 1989, 1998a, 1998b, 2000).

Ukrajina ima 13 pristanišč, med temi ni petih krimskih pristanišč, ki so bila leta 2014 priključena Rusiji. Ukrajinska pristaniška mesta so prostorsko razdeljena v pet regionalnih skupin, ki oskrbujejo bližnja industrijska podjetja ter so del državnih in mednarodnih prometnih koridorjev. Največjo skupino sestavljajo pristanišča na območju Odese, ki so znana kot Velika Odesa (aglomeracija pristanišč na območju Odese) ter vključujejo Odeso in satelitski mesti Južne in Črnomorsk ter ustvarjajo približno 54 % prometa vseh ukrajinskih morskih pristanišč (Demyanchenko, 2013).

Pristanišče v Odesi je v središču velikega mesta, v katerem živi več kot milijon ljudi. Odesa je bila zgrajena na območju, ki si ga je rusko carstvo konec 18. stoletja prisvojilo od Turčije, pristanišče pa je spodbudilo hitro rast mesta na severni obali Črnega morja. Spremembe političnih sistemov in pretrgane gospodarske vezi so vplivale tudi na pomorski tovorni promet, saj se je z razpadom Sovjetske zveze do tedaj ustvarjeni promet nenadoma zmanjšal za več kot polovico. Tovorne zmogljivosti aglomeracije pristanišč na območju Odese so bile prilagojene potrebam Sovjetske zveze z 250 milijoni prebivalcev, v današnji Ukrajini pa je manj kot 42 milijonov prebivalcev (internet 1, 2019). Površina pristanišča in dolžina pomola sta ostali enaki, oprema pa je zastarela.

Ker v mestu niso razvili učinkovite strategije v pomorski industriji niti je niso uskladili z urbanističnim načrtovanjem, je bila v starem mestnem jedru izvedena obsežna gradnja terminalov za žito, kar je povečalo njegovo prometno in okoljsko obremenjenost. Takšni posegi v urbano strukturo mesta imajo nepopravljive posledice in povzročajo degradacijo starega mestnega jedra. Zgoščanje velikih projektov, povezanih z gradnjo tovornih terminalov, v pristanišču se ne ujema s prakso drugje po svetu, kjer tovrstne terminale selijo iz mestnega središča. Poleg tega preprečuje, da bi ti terminali spremenili svojo funkcijo, in posledično pristanišču onemogoča, da bi zadovoljevalo interese javnosti. Zaradi obsežnosti pristaniške infrastrukture njena posodobitev in prenova zahtevata precejšnja sredstva, ki jih ukrajinska pristanišča nimajo, država pa jim zagotavlja premalo finančne podpore. Neurejeni lastniški odnosi v pristaniščih ter konkurenca med različnimi akterji v sklopu pristanišč in med njimi ustvarjajo zmedo in povzročajo upad tovornega prometa. V času globalizacije je preobrazba pristanišč in njihovih nabrežij tesno povezana s prestrukturiranjem svetovnega gospodarstva, tehnološkimi spremembami v proizvodnji, spremembami organizacijskih procesov v industriji obalnih območij in tekmovanjem med mesti v svetovni hierarhiji (Schubert, 2011). Ker procesa preobrazbe ne moremo več obrniti nazaj, je samo še vprašanje časa, kdaj se bodo v Ukrajini začele pozitivne spremembe, zavlačevanje pa ne prinaša nič drugega kot negativne posledice.

V članku so analizirani obstoječi koncepti in projekti, povezani z regeneracijo pristanišč v večjih evropskih mestih, pri čemer je poudarek na ključnih pogojih, ki morajo biti izpolnjeni za njihovo izvedbo. Avtorja poskušata razviti model prostorskega načrtovanja za glavna ukrajinska pristanišča, kot so Odesa, Nikolajev in Kerson, pri čemer se osredotočata na vpliv javnih ustanov na procese, ki potekajo na stiku pristanišča z mestom.

2 Pregled literature

Regeneracija pristanišč postaja čedalje bolj interdisciplinaren urbanistični pojav, ki zahteva pozornost raznovrstnih znanstvenikov s področij, kot so geografija (Hoyle, 2000), načrtovalske politike in strategije (Fainstein, 1994), okolje (Georgison, 1995), arhitektura in ekologija ter inženiring (Hudson, 1996). Številne raziskave (Breen in Rigby, 1993, 1996; Davies in Herbert, 1993; Ashton idr., 1994; Hasson in Ley, 1994; Krausse, 1995; Norcliffe idr., 1996) kažejo, da se je stik pristanišča z mestom spremenil v prostor, na katerem je boj med različnimi pristaniškimi in mestnimi silami močno izrazit. Deležniki in splošna javnost morajo biti vključeni v načrtovanje in odločanje že v začetni fazi razprav o konceptih in izbiranja rešitev.

Kompleksna tema regeneracije pristanišč do zdaj v Ukrajini še ni bila podrobno raziskana, proučena je bila samo z vidika splošnega načrtovanja obalnih območij. Nekateri avtorji so se osredotočali na osnovne težave, povezane z načrtovanjem, gradnjo in preureditvijo obalnih območij (Glazyrin, 1998, 2003; Onishchenko, 2008; Kirichenko, 2015), drugi pa so proučevali letoviška in rekreacijska območja (Panchenko, 1999, 2007; Urenev, 2003) ali so analizirali stanje in smer razvoja ukrajinskih morskih trgovskih pristaniš (Demyanchenko, 2012, 2013). Priznani strokovnjak za odnose med pristaniščem in preostalim mestnim območjem Hoyle (2000) navaja, da gre

pri selitvi pristanišč iz mestnih središč in oživljanju mestnih nabrežij za evolucijski proces, ki se je v 60. letih 20. stoletja začel v Severni Ameriki, se v 80. letih nadaljeval v evropskih obmorskih mestih, v 90. letih pa je dosegel Japonsko, Avstralijo in Južno Afriko. Projekti regeneracije mestnih nabrežij so bili izvedeni ali se izvajajo v več kot sto mestih po svetu, večina pa se jih osredotoča na obnovo mestnih funkcij ter temelji na ekonomskih, ekoloških in družbenih raziskavah (Hoyle, 2000).

Projekti obnove mestnih nabrežij ustvarjajo nove odnose med mesti, njihovimi navadami in prebivalci ter ponujajo edinstvene priložnosti za proučevanje pristanišč in novih mestnih funkcij z ekonomskega, ekološkega in družbenega vidika (Oakley, 2011). Schubert (2009) je proučeval inovativne tehnologije v pomorskem prometu, ki vplivajo na preobrazbo nabrežij in pristaniških terminalov, da lahko izpolnjujejo potrebe v zvezi z ladjami in kontejnerji. Obsežni projekti regeneracije pristanišč se izvajajo že od začetka 80. let 20. stoletja (Schubert, 2009). Zaradi čedalje večje avtomatizacije postajajo glavna pristanišča manj pomembna na urbanem trgu, kar je eden glavnih razlogov, zakaj je danes lokalna gospodarska rast velikih mest manj odvisna od pristaniških terminalov (Jacobs idr., 2010). Večina najpomembnejših svetovnih pristanišč redko zaposluje več kot nekaj tisoč ljudi. Zaradi različnih dejavnikov, kot so kontejnerizacija, avtomatizacija in ekonomija obsega, pristaniške dejavnosti postajajo kapitalsko intenzivnejše in temeljijo na dejavnostih na kopnem, hkrati pa postajajo manj delovno intenzivne. V zadnjih desetletjih so mnoga pristanišča postala produktivnejša in konkurenčnejša (Merk, 2013).

Številna pristaniška mesta spodbujajo turistične dejavnosti kot smiselno alternativo trgovskemu tovornemu pristanišču in dejavnostim, povezanim z ladijskim prometom (McCarthy, 1996, 1998). To se dogaja po vsej Evropi in v mnogih mestih drugje po svetu, največje spremembe pa so opazne v sredozemskih mestih, ki so s tem postala še pomembnejša za svetovni razvoj turizma. Daamen in Vries (2012) navajata, da regeneracija pristanišč zahteva posebno pozornost, saj pristanišča z vidika sodobnega prostorskega urejanja in načrtovanja veljajo za enega izmed najzapletenejših prostorov. Dejavnosti posameznega pristanišča, kot so ladijski promet, dejavnosti na kopnem in prevoz tovora iz pristanišča in vanj, imajo najrazličnejše posledice za okolje, povezane z izpusti v zrak, kakovostjo vode, onesnaženostjo prsti, odpadki, biotsko raznovrstnostjo in hrupom. Našteti okoljski problemi imajo lahko hude posledice za zdravje prebivalcev pristaniškega mesta, zlasti revnejših (Merk, 2010). Kot navaja Brand (2007), spreminjanje vloge nabrežij v urbanem tkivu povzroča enega glavnih okoljskih problemov 21. stoletja.

Pri projektih preobrazbe mestnih nabrežij je ključna strategija deindustrializacije. Mesta uporabljajo podoben pristop k urbanemu razvoju: industrijsko pristanišče selijo iz mestnega središča na območja, iztrgana morju, s čimer sprostijo prostor za kulturne, trgovske in turistične dejavnosti na območju nekdanjega pristanišča. V skladu z mestno strategijo trajnostnega razvoja je neizogiben proces diverzifikacije gospodarstva, ki ima močan vpliv na družbeno okolje. Izrazi regeneracija, obnova, revitalizacija in sanacija imajo različen pomen in so povezani z različnimi procesi in načrtovalskimi rešitvami. V kontekstu pristaniških območij pa je zanje značilen enoten evolucijski proces, ki vključuje novo uporabo in funkcijo deindustrializiranega ozemlja. Model razvoja stika pristanišča z mestom, ki ga je razvil Brian S. Hoyle (2000), kaže kronološki potek razmerja med obema območjema, pri čemer se v sklepni fazi razvoja sodelovanje med pristaniščem in mestom znova vzpostavi in poteka neprekinjeno, nabrežje oživi, pristanišče pa se iz mestnega središča postopno preseli na ustreznejša območja. Opisane temeljne značilnosti procesov in faz preureditve nabrežja se ujemajo z značilnostmi razvoja mest drugje po svetu.

Posledica izboljšanja funkcij pristaniških površin so obnovljeni in razširjeni potniški terminali, manjše vojaške površine in selitev tovornega območja iz mestnega središča v predmestje. Nekdanje proizvodne površine v pristanišču se spremenijo v javne, poslovne in rekreativne prostore. Pristaniška območja, ki so bila prej nedostopna javnosti in od mesta odrezana z železnico in avtocesto, postanejo aktivna in se spremenijo v vozlišča z najrazličnejšimi rekreativnimi in razvedrilnimi dejavnostmi. Novozgrajene stanovanjske in poslovne stavbe ter kulturna in umetniška prizorišča postanejo dostopni javnosti in turistom.

3 Metodologija

Procesi, ki potekajo na meji med pristaniščem in mestom, veljajo za najzahtevnejše na področju sodobnega načrtovanja in urejanja prostora. Za ohranjanje privlačne podobe mesta in njegove svetovne konkurenčnosti je neizogibna regeneracija njegovega deindustrializiranega pristaniškega območja. Za zagotovitev potrebnih sprememb mestnega nabrežja se je treba že v najzgodnejših fazah osredotočiti na dejavnosti različnih družbenih gibanj, lokalnih oblasti in oblikovalcev. Avtorja v raziskavi, predstavljeni v tem članku, proučujeta dejavnike in pojave, ki vplivajo na regeneracijo pristanišč v razvitih državah, in razloge za pojav sprememb na stiku pristanišč s preostalim mestnim prostorom v razvitih državah, usmerjenih v izvoz surovin, in ne v storitveni sektor. Za učinkovit proces regeneracije je treba razviti metode povezovanja vseh deležnikov, dejavnih na pristaniških in industrijskih območjih.

Empirični del raziskave je vključeval pregled in šifriranje dokumentov (prostorskih načrtov in konceptov, člankov v časopisih in revijah, poročil in drugih publikacij), javno raz-

Pristanišče	Regeneracija	Projekt
Amsterdam	1986–1992	IJ-oevers
Antwerpen	1999–2015	't Eilandje
Belfast	2002–2020+	Holywood Exchangue & City Quays
Barcelona	1985–2004	Port Vell & Port Olimpic
Kopenhagen	1990–2023+	Sydhavnen, Nordhavnen & Ørestad
Dublin	1993–2012	Dublin Docklands
Hamburg	1995–2017	HafenCity
Helsinki	1991–2017	Ruoholahti
Genova	1989–2010	Porto Antico
Glasgow	1989–2016	Clyde Waterfront & Clyde Gateway
Lizbona	1993–2010	Parque das Nações
Liverpool	1981–1984	Albert Dock
London	1980–1998	Docklands
Marseille	1995–2030+	Euroméditerranée
Oslo	2000–2030+	Fjordbyen
Rotterdam	2004–2030+	Kop van Zuid
Talin	2030+	Vanasadam

Slika 1: Projekti regeneracije pristanišč v Evropski uniji (ilustracija: Vladimir Khalin)

pravo s predstavniki pristaniške uprave in državnih organov ter javnomnenjske raziskave. Podatki se redno posodabljajo in objavljajo na spletni strani neprofitnega združenja arhitektov v Odesi (Association of Architects of Odesa, 2019).

Za določitev najustreznejše strategije razvoja stika pristanišč s preostalim mestnim prostorom v državah v razvoju in zlasti v ukrajinskih pristaniških mestih sta avtorja podrobno analizirala dvajset uspešnih projektov v večjih evropskih mestih. V članku so tako predstavljeni projekti regeneracije v različnih krajih po svetu in v različnih načrtovalskih razmerah, in sicer v Bilbau (ustje reke), Barceloni (morje) in Oslu (fjord). V slikovnem delu sta avtorja predstavila predlog prilagoditve tovornih zmogljivosti potrebam aglomeracije pristanišč na območju Odese in proučila perspektive dolgoročne regeneracije pristanišča v Odesi na podlagi analize SWOT. Izsledke raziskave je upoštevala strokovna javnost, poleg tega so bili predstavljeni na mednarodnih konferencah. Del raziskave je bil na zahtevo mestne uprave in pristanišča v Odesi predstavljen strokovnjakom pri Svetovni banki (internet 2, 2019).

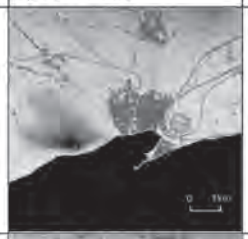
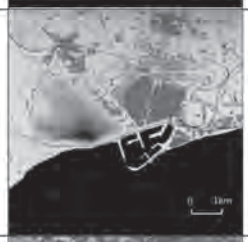
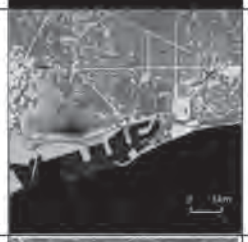
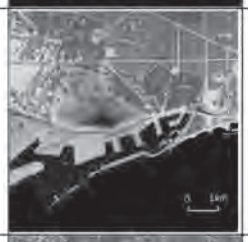
4 Projekti regeneracije evropskih pristanišč

Pri projektih regeneracije pristanišč v Evropi se znova vzpostavljajo prvotni odnosi med mestom in pristaniščem, ki so vladali v obdobju, ko je bilo pristanišče za mestne prebivalce trgovsko in prometno središče. Le pristaniški objekti in naprave, promet v pristanišču, železnica, doki, skladišča in tovarne so imeli dostop do obale. Razmere so se spremenile leta 1960, ko se je po vsem svetu začela preobrazba pristaniških objektov in naprav ter tehnologije za večja plovila. Ladje so postale večje in zanje so bili potrebni globlja voda ter več zemljišč in vodnih površin. Pristanišča so se morala pomakniti bolj proti morju, od katerega so morala iztrgati še več zemljišč, ob tem so morala začeti uporabljati tudi sodobnejšo tehnologijo. V glavnih evropskih projektih regeneracije pristanišč so bili uporabljeni različni modeli preobrazbe stika pristanišča z mestom (slika 1). Številna obalna mesta so bila na novo conirana, pri čemer so bila njihova nabrežja izključena iz industrijske rabe. Rečna pristanišča so se morala zaradi spremenjene pomorske infrastrukture, prilagojene večjim ladjam, pomakniti navzdol po reki (Hoyle, 2000).

Mnoga pristanišča v večjih evropskih mestih delujejo kot lastniki zemljišč, kar pomeni, da pristaniške uprave upravljajo zemljišča, ki mejijo na vodne površine. Upravljavcem dodeljujejo površine ali prostore na podlagi koncesije, določajo tarife glede na vrednost in lokacijo površin ter pobirajo zahtevana plačila. Praviloma so v takšnih pristaniščih občinske ali regionalne oblasti vključene v upravljanje pristanišča in imajo predstavnike v nadzornih odborih. Vloga državnih, regionalnih in občinskih oblasti pri izvajanju projektov regeneracije je v mnogih pogledih odvisna od upravne razdelitve države in porazdelitve pristojnosti med različnimi ravnmi oblasti. V več evropskih državah so bile vzpostavljene posebne strukture, ki naj bi pomagale pri izvedbi projektov regeneracije v posameznih regijah. Za boljše razumevanje različnih pristopov so v nadaljevanju prikazani primeri regeneracije pristanišč v Evropi in izkušnje, pridobljene na različnih krajih po svetu in v različnih načrtovalskih razmerah, in sicer v Bilbau, Barceloni in Oslu.

4.1 Bilbao Ria 2000

Po veliki industrijski krizi v 80. letih 20. stoletja so v sodelovanju s centralno oblastjo v Madridu baskovska vlada, vlada pokra-

Faza	Staro pristanišče (Port Vell)	Obdobje	Simbol	Značilnosti
Prvotno pristaniško mesto		Od antike/ srednjega veka do 19. stoletja		*Prostorska in funkcionalna povezava med mestom in pristaniščem. Nabrežje: prostor druženja in trgovine.*
Širitev pristaniškega mesta		Od 19. do začetka 20. stoletja		*Industrijske površine pristanišča se še naprej širijo proti morju. Zgrajeni so linearni pomoli za razsuti tovor. Mesto je od pristanišča odrezano z železnico.*
Sodobno industrijsko pristanišče		Sredina 20. stoletja		*Rast industrijske proizvodnje v pristanišču. Uvedba kontejnerjev in plovil za tovor ro-ro zahteva ločitev tovornih tokov ter nova zemljišča in terminale. Zaradi železnice in avtoceste je mesto čedalje bolj odrezano od pristanišča.*
Umik z nabrežja		1960–1980		*Zaradi sprememb v pristaniški tehnologiji in večjih ladij se poveča število industrijskih privezov na novih območjih razsutega tovora. Dostop do industrijskega pristanišča je za mestne prebivalce dokončno zaprt.*
Sanacija nabrežja		1970–1990		*Sodobno pristanišče zaseda velike kose zemljišč in se pomakne bolj proti morju, kjer je globlja voda. Staro pristanišče ni dovolj globoko in spremeni svojo funkcijo. Regeneracija nabrežja starega mestnega jedra.*
Regeneracija pristaniškega mesta		1980–2000+		*Zaradi globalizacije in intermodalnosti se spremeni vloga pristanišča. Znova se vzpostavi povezava med mestom in pristaniščem, regeneracija in sanacija to povezovanje še bolj okrepita.*

Slika 2: Faze razvoja odnosa med pristaniščem in mestom v Barceloni (shema na podlagi Hoylovega modela, avtor: Vladimir Khalin)

jine Biskaja in mestni svet v Bilbau odobrili strateški načrt regeneracije mesta na podlagi oblikovanja okoljskih, prometnih in urbanističnih projektov. Proces se je začel leta 1992 z ustanovitvijo javnega podjetja, odgovornega za regeneracijo mesta, z imenom Bilbao Ria 2000, ki naj bi delovalo kot posrednik med državo in gospodarstvom. V program so bili vključeni centralna španska vlada, vlada baskovske avtonomne skupnosti, svet pokrajine Biskaja ter mestna sveta v Bilbau in bližnjem Barakaldu, vzpostavljena pa so bila tudi posredništva med državo in poslovnimi subjekti. Skoraj že takoj na začetku je bila omenjena upravna struktura pretvorjena v delniško družbo in tako so obsežni infrastrukturni, načrtovalski in arhitekturni projekti postali glavni nosilci modernizacije Bilbaa. Zaradi izvedenih gradbenih posegov v pristanišču in posledičnega preoblikovanja omrežja glavnih prometnih koridorjev reka in njeni bregovi spet pripadajo mestu in njegovim prebivalcem.

Slika 3: Projekt Fjord City v Oslu (vir: internet 3, 2019)

Temeljita preureditev se je osredotočala na območja ob reki, na katerih ni več potekala redna pristaniška dejavnost. V skladu z načrtom naj bi reka postala središče vseh novih trgovskih in družabnih dejavnosti, projekt pa je obsegal obnovo zapuščenih industrijskih objektov in njihove okolice. Pristaniške dejavnosti so bile pomaknjene po reki navzdol, novo razpoložljive površine pa so uporabili v družbene namene. Regeneracija mestnih območij se je začela z vzpostavitvijo gospodarske strukture, osredotočene na storitvah, kulturi in novih industrijah. Preobrazba rečnih bregov je potekala na podlagi načrtovanja, pri katerem je bil vrstni red posegov jasno določen, ter je obsegala okoljske in gospodarske izboljšave. Projekt prenove pristanišča je bil poimenovan po neprofitni organizaciji Bilbao RIA 2000, ki nadzoruje in upravlja rezultate sodelovanja na vseh ravneh procesa. Odgovorna je za usklajevanje in izvajanje raznovrstnih dejavnosti, ki se nanašajo na načrtovanje, promet in okolje. Podjetje razvija mednarodne projekte in upošteva priporočila mestnih urbanistov.

4.2 Staro pristanišče (Port Vell) v Barceloni

Klasičen primer neposredne povezave med mestom in pristaniščem, pri čemer so številni parametri zelo podobni tistim v pristanišču v Odesi, je tudi projekt preureditve starega barcelonskega pristanišča, v katalonščini znanega kot Port Vell. V zgodnjih 80. letih 20. stoletja se je morala barcelonska pristaniška uprava odločiti med preureditvijo starega pristanišča, ki bi ustrezalo sodobnim zahtevam obdelave tovora, in selitvijo pristaniških tovornih zmogljivosti zahodno od mestnega središča, kar bi prebivalcem omogočilo dostop do morja. Predlog, da bi nabrežje postalo dostopno prebivalcem in turistom, je bil uspešen in je močno vplival na gospodarski razvoj mesta. Leta 1985 je projektna skupina, ki jo je imenovala pristaniška uprava, za namene spodbujanja prenove pristaniškega območja ustanovila posebno upravno telo. Ker je mestni svet vseskozi podpiral načrte pristaniške uprave, je ta lažje premagovala birokratske težave, povezane s preureditvijo. Katalonska vlada je načrt prenove dokončno uskladila in sprejela do sredine leta 1989 (slika 2).

V okviru obsežnih priprav na poletne olimpijske igre leta 1992 je bilo staro pristanišče preurejeno v območje za pešce in rekreacijo, tovorni terminali pa nimajo več dostopa do središča in severnega dela mesta. Pristaniška uprava je vsem prebivalcem in turistom omogočila dostop do morja v središču mesta, ki zdaj velja za dostopno mestno okolje, v katerem se tradicija meša s sodobnostjo, hkrati pa je to eden izmed najbolj edinstvenih in priljubljenih območij v Barceloni. Skozi stoletja je imelo barcelonsko pristanišče aktivno vlogo pri oblikovanju prihodnosti mesta, saj se je sčasoma spremenilo v udobno bivalno lokacijo, hkrati pa je spodbujalo gospodarsko blaginjo (Port de Barcelona, 2010). Mesto je olimpijske igre leta 1992 izkoristilo za to, da je preuredilo stik pristanišča z mestom in razvoj nabrežja vključilo v dolgoročno načrtovalsko strategijo. Prenova starega barcelonskega pristanišča kaže, da se je na podlagi oblikovanja raznovrstnega poslovnega modela izboljšala konkurenčnost pristanišča.

4.3 Projekt Fjord City v Oslu

Norveška prestolnica Oslo leži ob fjordu. Do 20. stoletja so ladjedelnica in njeni objekti onemogočali javni dostop do morja. Občinske in pristaniške uprave imajo običajno različna mnenja o postopnem razvoju morskega nabrežja v mestih, usklajevanje uradnih stališč in pogledov pa pogosto traja več desetletij. V Oslu so pogajanja in usklajevanja stališč potekala med letoma 1982 in 2008. Pristanišče v Oslu je lastnik morskega nabrežja in ima največje koristi od gospodarske dejavnosti na tem območju, zato je v njegovem interesu, da se pristanišče in njegove dejavnosti dobro razvijajo. V upravljanje pristanišča so vključeni predstavniki različnih ravni pristaniške uprave in mestne občine, zato lahko mestne oblasti posredno ali neposredno vplivajo na odločitve pristanišča (De Vibe idr., 2008).

Norvežani imajo že od nekdaj raje, da identiteto mest določajo naravne značilnosti, in ne industrijski objekti, to pa je bil tudi najpomembnejši dejavnik pri odločanju o selitvi pristanišča iz središča Osla. 19. januarja 2000 se je začel obsežen program preureditve pristanišča, imenovan Fjord City (nor. *Fjordbyen*) ali Fjordsko mesto, v okviru katerega je bilo morsko nabrežje spremenjeno v privlačno območje s stanovanji, pisarnami in kulturnimi ustanovami. Mestni svet v Oslu se je odločil, da morajo biti pristanišče in industrijska območja vključeni v program razvoja mesta in postati del mestne pokrajine. Projekt Fjord City je tako večplasten in kompleksen, da občinske oblasti za njegovo izvajanje uporabljajo več pristopov. Občina

Slika 4: Stara upodobitev Primorskega bulvarja (vir: internet 5, 2019)

je lastnica zemljišč, gradbeni izvajalec pa mora ob njihovem nakupu upoštevati stroge zahteve, povezane z javnimi prostori in njihovo razpoložljivostjo. Lastniki zasebnih zemljišč imajo običajno več svobode pri načrtovanju, če ima mestni svet omejen proračun. V tem primeru mora svet izvesti obvezen nakup v okviru javno-zasebnega partnerstva, uvesti spremembe v tem partnerstvu in prenesti lastništvo na mesto. Infrastruktura se tako zgradi na graditeljeve stroške, njen lastnik pa postane občina. Zaradi opisanih zahtev se cene zemljišč na kvadratni meter nerealno zvišujejo, hkrati pa to omogoča, da se prejeta sredstva vložijo v socialne namene (tj. šole in zelena območja).

Na podlagi sprejetih odločitev je bila izvedena regeneracija morskega nabrežja v Oslu. Pristanišče v Oslu ima ključno vlogo v gospodarstvu države, ki potrebuje močne notranje in zunanje trgovske povezave. V okviru selitve pristanišča je bil kontejnerski terminal premaknjen proti jugu, vzdolž vzhodne strani fjorda. Terminali za potniške ladje, ribiške barke, jadrnice in vojaške ladje so sestavni del mestnega nabrežja in soustvarjajo koncept fjordskega mesta. Sodobno pristanišče s priveznimi mesti na večjih globinah in novo tehnologijo za prenos tovora ne bo preobremenilo mestne infrastrukture. Do leta 2030 Oslo tako ne bo imelo samo novega mestnega predela, ampak tudi novo, sodobno pristanišče (Gisle Rekdal, 2013; internet 3, 2019; internet 4, 2019).

Največja težava pri današnjih spremembah pristaniških mest je nesposobnost prilagajanja potrebam, ki jih narekujejo razvoj pristanišč in mest ter prakse drugje po svetu. Kot navaja Hoyle (1989, 2000), so bili v zadnjih desetletjih procesi preobrazbe pristanišč posledica širših, med seboj manj odvisnih trendov:

- razvoj pomorske tehnologije in občutno večja plovila so spodbudila obsežen razvoj metod obdelave kontejnerjev;
- pri sodobnem prevozu tovora niso v celoti izkoriščene zmogljivosti sodobnih pristanišč;
- zaradi zmanjševanja števila pristaniških delavcev se preoblikuje tudi mestno gospodarstvo.

Vlada daje prednost razvoju podjetij, ki se ukvarjajo s pristaniško dejavnostjo in logistiko, na vseh ravneh in ima pri preference pri odločanju o razvoju mesta. V svetu malih in srednje velikih podjetij (vključno s tistimi s področja medijev, informacijske in komunikacijske tehnologije, filma, glasbe, oblikovanja in turizma) je ključno napredno razmišljanje. Taka podjetja so temelj razvoja in sprememb v mestih. Uspešen gospodarski razvoj rastočih mest 21. stoletja temelji na zagotavljaju višje kakovosti življenja, ki jo mesta dosežejo z visoko koncentracijo gospodarskih dejavnosti in izobraževalnih ustanov ter ponudbo prostorov za najrazličnejše prostočasne dejavnosti. Zato morajo mesta in regije z vzdrževanjem območij v državni lasti ohranjati konkurenčnost na mednarodnem trgu. Mesta načrtujejo kraje za delo, prebivanje in sprostitev, katerih kakovost privlači ustvarjalni razred (Florida, 2005; Peck, 2005). Te družbe, temelječe na znanju, tako postanejo neposreden izraz procesa globalizacije.

5 Stik pristanišča z mestom v Odesi: razvojne strategije

5.1 Proučevano območje: geografske in zgodovinske okoliščine razvoja pristanišča v Odesi

V 19. stoletju se je Odesa zaradi lege ob Črnem morju razvila v trgovsko in kulturno središče, ki je rusko carstvo povezovalo s preostalim svetom. Mesto je bilo ustanovljeno na skalnati planoti, ki se dviga več kot 50 m nad morjem. Morsko pristanišče je postalo središče prometa in družabnega življenja, kar je bilo v ostrem nasprotju s strmimi, neobdelanimi in neposeljenimi območji na severni obali Črnega morja. Kot mlado mesto je Odesa po zaslugi Primorskega bulvarja, ki ima pomembno mesto v svetovni kulturni dediščini, hitro zaslovelo kot sodobno mesto. Na začetku 20. stoletja je pristanišče zaradi industrializacije postopno izgubilo povezavo z mestom, do katerega so imeli prebivalci zaradi železnice omejen dostop. Leta 1927 je

Slika 5: Novi pomol in Primorski bulvar (foto: Vladimir Khalin)

bil uveden omejen javni dostop do pristanišča, od leta 1947 pa prebivalci vanj niso imeli več dostopa. Tako je pristanišče izgubilo povezavo z mestom, prebivalci pa niso imeli dostopa do 10-kilometrske obale.

Plitke ozke reke in morje so s svojimi peščenimi nanosi ustvarili estuarije, ki so del značilne pokrajine na območju Odese. Leta 1956 je Aleksej Jevgenijevič Dančenko, direktor črnomorske ladjarske družbe, predlagal, da se razsuti tovor iz Odese preseli v bližnje naselje Suhi Liman (kar pomeni suhi estuarij), ki je 30 km oddaljeno od pristanišča v Odesi, in ukrajinske oblasti so predlog podprle. S tem je bilo kot dodatno okno v svet ustanovljeno pristanišče v Iličevsku (današnji Černomorsk). V 60. letih so začeli poglabljati dna estuarijev, kar je omogočilo delno odstranitev tovornih terminalov in hkrati gradnjo dveh večjih pristanišč (Južne in Černomorsk). Odstranjevanje tovornih terminalov iz središča Odese se je začelo že v obdobju prvega pristanišča, hkrati s projekti regeneracije industrijskih območij v Severni Ameriki. Na žalost zaradi neprožnega sovjetskega planskega gospodarstva ti terminali niso bili nikoli v celoti odstranjeni, saj nobena pobuda, ki jo je podalo zasebno podjetje, ni mogla vplivati na spremembo urbanističnih načrtov. Danes ima aglomeracija pristanišč na območju Odese zaradi geografskih prednosti (tj. estuarijev, ki omogočajo razvoj tovornih pristanišč) edinstveno priložnost, da postane največje prometno in logistično vozlišče na obali Črnega morja. Osem od skupno trinajst pristanišč v Ukrajini je na območju Odese: eno v morskem zalivu (Odesa), tri v estuarijih (Černomorsk, Bilhorod-Dnistrovski in Južne) in štiri na rekah.

V posovjetskem obdobju (od začetka 90. let 20. stoletja) je razvoj pristanišča v Odesi potekal v naslednjem zaporedju:

- nespecializirani privezi in terminali, ki so zadovoljevali potrebe zasebnih podjetij, ta so imela v najemu površine pristanišča, ki je bilo v lasti države;
- opuščanje območij;
- pomanjkanje usklajene strategije razvoja pristanišča;
- večanje števila terminalov za razsuti tovor;
- širitev pristanišča zaradi gradnje novih kontejnerskih terminalov na območjih, iztrganih morju;
- rast prometa, onesnaženost in obremenjenost s hrupom v mestu.

5.2 Degradacija stika pristanišča z mestom

V zadnjih letih je Ukrajina poskušala aktivno pridobivati javna sredstva za infrastrukturne projekte, eden izmed pogostih argumentov proti gradnji infrastrukture pa je bil, da vpliva na razvoj in gospodarsko rast zadevnega območja. Projekti, ki se izvajajo v okviru javno-zasebnih partnerstev, se ne skladajo s konceptom trajnostnega razvoja milijonskega mesta. Namesto da bi bili objekti za razsuti tovor odstranjeni iz starega mestnega jedra, se vzdolž celotne obale gradijo terminali za žito (trenutno jih je v gradnji devet), ki bodo zasedli celotni obalni predel v središču mesta (slika 6.). 45 m visoki žitni silosi so staro mestno jedro odrezali od morja. Središče Odese je okoljsko obremenjeno s prahom, tega tja nosijo prevladujoči severovzhodni vetrovi, arhitekturni pojmi, kot sta obalno pročelje mesta in pogled na morje, pa za mesto ne veljajo več.

Slika 6: Gradnja terminalov za žito v središču Odese (foto: Stanislav Gref)

Slika 7: Onesnaževanje vodnega območja in mesta s prahom ob nakladanju ladje razreda Handymax (foto: Vladimir Khalin)

Raziskava poslovanja pristanišča v Odesi, ki so jo opravili strokovnjaki Svetovne banke pod vodstvom Petra Binghama, je pokazala, da najintenzivnejše nakladanje ladij poteka ob najmočnejšem vetru (internet 2, 2019). Hkrati se ob upravičevanju tovrstnih projektov ne upošteva dejstvo, da je trenutno izkoriščenih samo 86 % zmogljivosti vseh žitnih terminalov v Ukrajini, kar kaže, da je na trgu dovolj zmogljivosti za pretovor žita. Ker žitni trg omogoča visoke donose, bodo podjetja, ki se ukvarjajo s surovinami, še naprej izvajala tovrstne projekte. Do konca leta 2018 naj bi se zmogljivosti povečevale hitreje kot količine izvoženega žita, zato se bo intenzivnost nakladanja na terminalih zmanjšala, sedanje presežne zmogljivosti na izvoz-

Zemljevid	Priložnosti	Nevarnosti
	• Gradnja novih terminalov za žito, • gradnja novega železniškega viadukta, • podvojitev količine tovora, • poglobitev pristanišča, • železnica in cestni nadvoz preprečujeta dostop do nabrežja v starem mestnem jedru, • pešci lahko do 10-kilometrske obale dostopajo samo prek nadhoda na Novem pomolu.	• Degradacija starega mestnega nabrežja, • nižje cene nepremičnin v okolici cestnega nadvoza, • obremenjenost s hrupom in pritiski na okolje, • visoki finančni stroški in nizki donosi, • manjša turistična privlačnost območja, • negativne posledice za lokalni promet in dostop za pešce.

Slika 8: Ocena strategije razvoja pristanišča (ilustracija: Vladimir Khalin in Natalie Kiely)

nem trgu žit pa se bodo do leta 2020 še povečale. To pomeni, da ti gradbeni projekti, ki se izvajajo na najdragocenejših mestnih območjih, niso stroškovno učinkoviti.

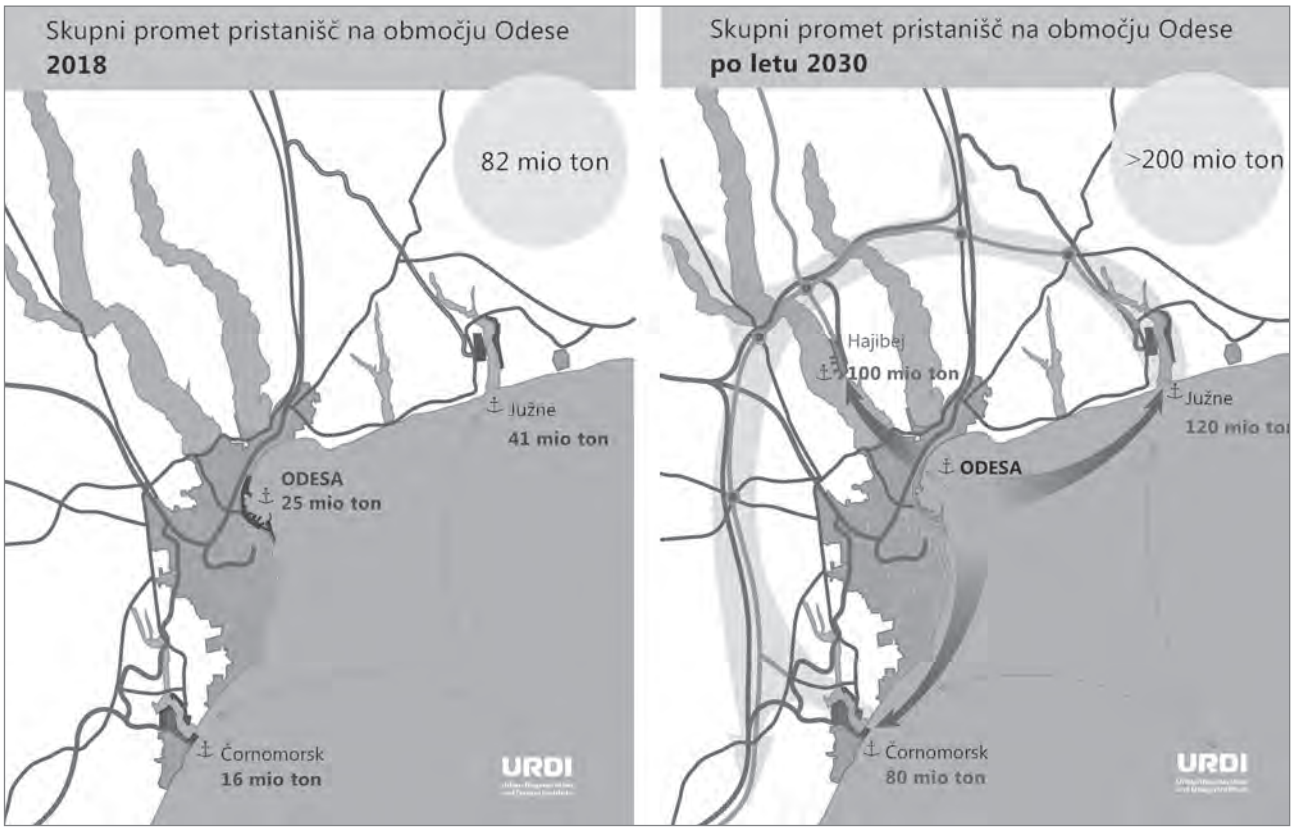
Svetovna trgovina in oddajanje del zunanjim izvajalcem hitro naraščata zaradi stalnega izboljševanja učinkovitosti dobavne verige in prevozov. Poleg sodobnih prevoznih tehnologij pa je razlog za nizke cene prevoza tovora tudi dejstvo, da nekatere stroške krijejo davkoplačevalci. Pristaniški, cestni in železniški infrastrukturi se lahko pripišejo naslednje prikrite negativne posledice: prometni zastoji v pristaniščih, onesnaženost zraka in posledično višji zdravstveni stroški. To kažejo tudi razmere v Ukrajini: izvoz žita, ki znaša okoli 40 milijonov ton letno, pri čemer se večina žita po cestah pripelje v črnomorska pristanišča, povzroča obrabo cest in prometne zamaške na pristaniških območjih. Te dejavnike je treba upoštevati pri oblikovanju programov razvoja pristanišč. Glede na to, da razvoj prometne in logistične infrastrukture ni samo ena izmed najnujnejših nalog držav v razvoju, ampak vključuje tudi veliko tveganje (z demokratičnega in pragmatičnega vidika), je treba javnost čim bolj pritegniti in vključiti v odločanje. Trajnostni razvoj Odese ni mogoč brez decentraliziranja sistema upravljanja pristanišča. Za podobne projekte je potrebna prerazporeditev javnih in zasebnih obveznosti, da se okrepi odgovornost vpletenih strani. Na podlagi pregleda razvojnih projektov v pristanišču v Odesi (Odesa Sea Port Authority, 2019) lahko določimo priložnosti in nevarnosti, prikazane na sliki v nadaljevanju.

Glavna vloga vlade in občinskih organov ne bi smelo biti spodbujanje infrastrukturnih projektov, za katere lobirajo velike korporacije, ki se ukvarjajo s prevozom in prodajo surovin, ampak prav nasprotno: deležnikom ne bi smeli dovoliti, da kakor koli vplivajo na projekt. V vsaki fazi projekta bi morali proučiti, ali projekt izpolnjuje namene in zahteve javnega interesa in je skladen z zakoni in drugimi predpisi, ki se nanašajo na varstvo okolja, varnost in varčevanje. Sedanji koncepti (Ports of Ukraine, 2019) nadaljnjega razvoja pristanišča temeljijo na širitvi območja za obdelavo razsutega tovora in ne ponujajo odgovora na glavno urbanistično vprašanje: kako se lahko ob gosti pozidavi zagotovijo prometne povezave med kopnim in terminali, pomaknjenimi v globlje morje?

5.3 Regeneracija pristaniškega območja

Projekti na področju urbanizma in načrtovanja območij so najpomembnejša naložba v prihodnost, saj so nujni za izboljšanje kakovosti življenja in uspešno izvajanje globalizacijskega procesa, spoštovanje kulturne dediščine in raznovrstnosti ter razumevanje in upoštevanje potreb različnih skupin prebivalstva.

Državna pristanišča v Ukrajini imajo ogromno opuščenih in neizkoriščenih površin. Primer učinkovite sodobne pristaniške tehnologije je lahko kazalnik letnega prometa blaga in dolžine priveza pristanišča v Rotterdamu, ki znaša 477 milijonov ton na 57 kilometrov. Kazalnik za vsa ukrajinska pristanišča skupaj pa znaša le tretjino tega, in sicer 131 milijonov ton na 40 kilometrov. Oblikovanje prostorov, privlačnih za naložbe najrazličnejših podjetij, ki niso neposredno povezana s pristaniškimi dejavnostmi, bo poživilo ta dragocena območja, kar bo posledično spodbudilo skokovito rast delovnih mest in povečalo splošno blaginjo v državi. Izkušnje iz Barcelone kažejo, da se je po obnovi starega pristanišča število delovnih mest povečalo za desetkrat, povečali pa so tudi naložbe v pristaniške objekte in naprave ter dobički podjetij. Mestni prebivalci, neprofitne



Slika 9: Prevoz in logistika v strukturi aglomeracije pristanišč na območju Odese, 2018–2030 in pozneje (ilustracija: Vladimir Khalin in Natalie Kiely)

organizacije in občinske oblasti morajo pokazati več pobude za kakovostno spremembo okolja. Participativna načrtovanje in oblikovanje proračuna, pri čemer so skupnosti vključene v upravljanje skupnega premoženja v mestih, kot so javni prostori, lahko izboljšata prostorsko vključevanje različnih skupin prebivalstva ter okrepita vezi, varnost, vitalnost, lokalno demokracijo in družbeno odgovornost.

Primerjava značilnosti projektov regeneracije pristanišč v Odesi in Barceloni razkriva pomembno razliko v usmeritvi pristanišč, katerih dejavnost temelji na pretovoru blaga. Večina pretovorjenega blaga v Barceloni se izvaja s kontejnerji, v Odesi pa je v obliki razsutega tovora. Glavna prednost pristanišč na območju Odese je njihova geografska lokacija, ki omogoča prenos vseh tovornih zmogljivosti v satelitska mesta ob estuarijih, kot sta Južne in Čornomorsk, ki so primerna za gradnjo hidravličnih konstrukcij, ne da bi to povzročilo škodo ali izgube v tovornemu prometu.

Morje ob pristaniščih v mestih Južne in Čornomorsk je dovolj globoko, da lahko ti sprejmeta večje ladje. Zmogljivosti pristanišča Južne (120 milijonov ton) so skoraj enake skupnemu prometu vseh ukrajinskih pristanišč, ki znaša 131 milijonov ton (po podatkih iz leta 2016). Skupne zmogljivosti terminalov za žito v ukrajinskih pristaniščih (66,2 milijona ton) že presegajo celotno količino letno pridelanega žita v državi (66 milijonov ton) in glede na to, da država sama porabi samo okoli 30 milijonov ton žita, so presežne zmogljivosti pristaniških terminalov že dvakrat večje od količine žita, ki je na razpolago za izvoz. Gradnja novih terminalov za žito bo zato samo še povečala konkurenco med nakladalnimi podjetji v posameznem pristanišču.

Nekateri izmed prvih ukrepov za preobrazbo pristanišča v Odesi, sprejetih v postindustrijskem obdobju, so bili povezani z zamislijo o vzpostavitvi turističnega središča na obali Črnega morja, pri čemer bi Odesa postala začetna in končna destinacija križarjenj po Sredozemlju. Hkrati naj bi se tovorno pristanišče preselilo v estuarij Kadžibejski Liman (Skachek in Freidlin, 2012), kjer naj bi na območju z nepozidanim zaledjem zraslo prometno in logistično središče. S preselitvijo pristanišča iz Odese za 30 kilometrov bolj v notranjost bi se izboljšal dostop za avtomobile in železniški promet, zmanjšal bi se okoljski vpliv na pokrajino in mesto ter spodbudil bi se nastanek sodobnih proizvodnih podjetij blizu novega pristanišča zunaj mesta. Po načrtih naj bi bilo sodobno pristanišče povezano s koridorji vseevropske prometne mreže TEN-T (Khalin, 2016), kar se ujema z razvojem pristanišč drugje po svetu.

Maja 2018 je zveza arhitektov iz Odese organizirala strokovni posvet z nemškimi študenti in profesorji, junija istega leta pa še okroglo mizo o obmorskih mestih. Na urbanističnem

Zemljevid	Priložnosti	Nevarnosti
	• Zaustavitev gradnje novih terminalov za žito, • prepoved pretovora razsutega blaga (glina, rude, kemične surovine), • preureditev Platonovega pomola v prostor za druženja in rekreacijo, • mednarodni arhitekturni natečaji za regeneracijo nabrežja starega mestnega jedra, • posodobitev terminalov v severnem delu pristanišča.	• Nasprotovanje najemnikov terminalov in nakladalnih podjetij, • šibak vpliv občinskih organov na pristaniško upravo, • slab dostop za promet in pešce, • težave s financiranjem arhitekturnih natečajev in oblikovalskih projektov, • državno lastništvo infrastrukture, nasprotovanje zasebnih podjetij.
	• Postopen prenos pretovora s Karantenskega in Vojaškega pomola v pristanišči Južne in Črnomorsk, • povezava mesta s pomolom Potapova in Vojaškim pomolom ob upoštevanju nemotenega delovanja železnice, • razvoj projektov regeneracije nabrežja, • razvoj turizma, ki temelji na križarjenjih, • gradnja javnih objektov, krajinsko urejanje okolice.	• Neusklajenost državne in regionalne politike, • težave pri preoblikovanju prometne infrastrukture, • slab vpliv institucionalnih mehanizmov na spodbujanje projektov, • nepredvidljive politične razmere na območju Črnega morja, ki ovirajo razvoj turizma križarjenj, • zapleti, povezani z zakonodajnimi spremembami.
	• Regeneracija območja med nakupovalnima središčema na pomolu Potapova in Karantenskem pomolu (sprememba funkcije v območje druženja in rekreacije), • posodobitev tovorne železniške infrastrukture v severnem delu pristanišča, • gradnja elektrificirane železniške proge med severom in jugom, • gradnja novih prog javnega prometa (tramvaj in enotirni vlak) blizu Centralnega parka, • razvoj regionalnega javnega pomorskega prometa.	• Projekti, ki omogočajo zadosten finančni donos, uravnoteženost trgovskih in javnih stavb, • ovirani prometni tokovi v predelu Peresip, • stanovanja in zasebna zemljišča ob načrtovani elektrificirani železniški progi, • težavne geološke razmere v Centralnem parku, • premalo privezov na obali v regiji.

Slika 10: Ocena projektnih faz regeneracije pristanišča v Odesi (ilustracija: Vladimir Khalin in Natalie Kiely)

oddelku državne akademije za gradbeništvo in arhitekturo v Odesi vsako leto trije do štirje študenti za magistrsko nalogo izberejo temo, ki se nanaša na obnovo pristanišča (Association of Architects of Odesa, 2019). Za pridobitev koristnih povratnih informacij bi bilo treba razpisati mednarodni arhitekturni natečaj za obnovo pristanišča, podoben odmevnemu natečaju, ki so ga pripravili v Talinu. Z njim bi Odesa postala znana kot trajnostno naravnano in demokratično mesto. Projekti razvoja ali obnove pristanišč bi morali biti vključeni v regionalne in mestne načrte (Khalin, 2017). Treba bi bilo izvesti interdisciplinarne raziskave povezave med mestom in pristaniščem ter poiskati najboljše rešitve. Regeneracijo pristaniških območij je treba izvesti po korakih, ob upoštevanju interesov vseh udeležencev in čim večje javne koristi. Nekateri smiselni predlogi, povezani s priložnostmi in morebitnimi tveganji, so povzeti na sliki 10.

6 Sklep

V številnih mestih s pristaniščem v starem mestnem jedru se regeneracija pristaniškega območja začne zaradi pritiska družbe, to pa preraste v razpravo med civilnimi organizacijami, občino in pristaniško upravo. Takšna razprava se razvije postopno, v desetih do dvajsetih letih, in nima večjih posledic za delovanje pristanišča. Običajno se osredotoča na območja zunaj mesta, ki bi bila najprimernejša za nove terminale. Mnoge zapuščene trgovine in skladišča lahko ob spremembi funkcije znova zaživijo in uspešno delujejo. V upravljanje pristanišča je treba vključiti predstavnike mesta in jim omogočiti, da sprejemajo pomembne odločitve skupaj z drugimi udeleženci, tudi lokalno skupnostjo. Treba je začeti izvajati interdisciplinarne raziskave, za začetek v okviru skupnih delavnic za študente različnih visokošolskih ustanov, tudi iz mest drugje po svetu, ki imajo izkušnje z regeneracijo pristanišč. Pri spodbujanju institucionalnih mehanizmov za regeneracijo mestnih nabrežij ima glavno vlogo demokratična družba. Takšno pot so uporabila najuspešnejša mesta po svetu, kjer so morska nabrežja lepo urejena, na njih delujejo najrazličnejša podjetja in lokali, zgrajeni pa so bili tudi novi javni prostori. Vse to je privlačno za najpomembnejši dejavnik v konkurenčnem boju med najuspešnejšimi mesti 21. stoletja: ustvarjalne ljudi.

Na podlagi pregleda evropskih primerov uspešne regeneracije pristanišč v starih mestnih jedrih sta avtorja ugotovila, da so v vzhodnoevropskih državah v razvoju potrebne podrobnejše raziskave stika pristanišč z mestom. Za ukrajinska pristanišča v večjih mestih, kot so Odesa, Mikolajev in Kerson, predlagata naslednje načrtovalske in upravljavske ukrepe:

- struktura tovornih tokov skozi ukrajinska morska pristanišča daje realno podobo gospodarstva države ter kaže stopnjo njenega industrijskega razvoja in gibanje prihodkov prebivalcev. V državi nekdanje Sovjetske zveze z rastočim gospodarstvom bi bilo treba izvesti interdisciplinarne raziskave posledic preselitve tovornih terminalov iz starih mestnih jeder;
- regulativni okvir pristaniških dejavnosti v Ukrajini močno zaostaja za procesi, ki dejansko potekajo v praksi: pristaniška zemljišča so v lasti lokalnih oblasti, vsi objekti in infrastruktura pa so v državni lasti. Ena izmed rešitev bi bila vzpostavitev skupne uprave;
- javnost bi morala biti bolje obveščena o projektih razvoja pristanišča ter njihovih družbenih, okoljskih, gospodarskih in kulturnih vplivih. Morala bi imeti dostop do objektivnih podatkov o nastalih stroških za mestne prebivalce in koristi, ki jih ima mesto od pristaniške dejavnosti;
- občina bi morala opraviti neodvisno raziskavo dolgoročne prihodnosti pristanišča in izbrati najprimernejšo rešitev za trajnostni razvoj mesta;
- državno upravljanje pristanišč v Ukrajini omogoča, da se pristanišča specializirajo za posebno vrsto tovora. Vlada bi morala oblikovati dolgoročno strategijo razvoja in specializacije pristanišč na podlagi potreb urbanističnega načrtovanja in trajnostnega razvoja.

Vladimir Khalin, Odesa State Academy of Civil Engineering and Architecture, Department of Town Planning, Odesa, Ukrajina
E-naslov: khalin@ogasa.org.ua

Natalie Kiely, Cork, Irska
E-naslov: nataliekiely@eircom.net

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Živa Ravnikar
Barbara Goličnik Marušić

Na naravi temelječe rešitve: predstavitev projekta Connecting nature

Projekt Connecting nature je bil odobren na razpisu programa Obzorje 2020: Pametna in vzdržna mesta, H2020-SCC-2016-2017. Temelji na konceptu na naravi temelječih rešitev, ki izhajajo iz prepoznavanja vrednosti analogije med značilnostmi naravnih procesov in prostorskim načrtovanjem. Na naravi temelječe rešitve nastanejo s celovitim sooblikovanjem in soustvarjanjem procesov, ki omogočajo več ekoloških, okoljskih in družbenih koristi. Koncept se je razvil iz iskanj odgovorov in izzivov na soodvisni vprašanji: kako lahko narava pomaga mestu in kako načrtovati prostor, ki bo sočasno zagotavljal več koristi hkrati. Primeri načrtovanja na naravi temelječih rešitev za dobrobit mest so raznovrstni. To so lahko na primer načrtovanje elementov zelene infrastrukture, ki imajo poleg mikroklimatskih učinkov tudi vlogo povezovanja delov mest, omogočajo trajnostno premikanje prebivalstva in/ali rekreacijo. Na naravi temelječe rešitve zagotavljajo biotsko raznovrstnost, koristi za okolje in lahko združujejo različne kombinacije pozitivnih vplivov, na primer proizvodnjo energije, trajnostno ravnanje z odpadki, spodbujanje družbenega povezovanja, načrtovanje zelenih površin z vidika javnega zdravja ipd.

Čeprav je vrednost koristi na naravi temelječih rešitev prepoznana, sta razvoj in izvajanje teh rešitev v praksi zapletena, pogosto otežena in predvsem lahko precej počasna procesa. Prenos koncepta teh rešitev v prakso je za večino mest izziv tudi pri vključevanju v odločevalske procese. Rešitve zahtevajo prizadevanja in sodelovanje strokovnjakov z različnih področij, saj obravnavajo različice okoljskih, družbenih in gospodarskih izzivov družbe na trajnostni način. Pri načrtovanju rešitev se načrtovalci ali odločevalci pogosto spoprijemajo s silosnim razmišljanjem, ki je iskanje rešitev z mankom navzkrižnega komuniciranja in sodelovanja več strok, upravljanjem družbenega povezovanja in izpopolnjevanjem znanja glede okoljevarstvenih rešitev. Projekt Connecting nature obravnava vprašanje: *Kako koncept na naravi temelječih rešitev učinkovito vključiti v prakso načrtovalskih in odločevalskih procesov?*

V projekt je vključenih 31 organizacij, ki sodelujejo z lokalnimi oblastmi, skupnostmi, industrijskimi partnerji, nevladnimi organizacijami in strokovnjaki z različnih področij. Partnerstvo 16 evropskih držav, Brazilije, Kitajske, Južne Koreje in Kavkaza (Gruzija in Armenija) vlaga v večmilijonske naložbe v izvedbo na naravi temelječih rešitev. V okviru projekta se vrednoti vpliv pobud in na naravi temelječih rešitev partnerskih mest z vidika prilagajanja podnebnim spremembam, zdravja in dobrega počutja ljudi, družbenega povezovanja in trajnostnega gospodarskega razvoja. Namen projekta je postaviti Evropo na globalni vodilni položaj na področju inovacij in izvajanja na naravi temelječih rešitev v razvoju mest in družbe. Skupaj s partnerskimi mesti se ustvarjata referenčni okvir znanja in baza podatkov na naravi temelječih rešitev. Vrednotenje rešitev in inovacij ter sintetiziranje različnih pristopov in metodologij pri tem sprožata nov proces znanja, ki bo tudi drugim mestom po svetu pomagal pri prenosu na naravi temelječih rešitev v urbani prostor.

Pomembno vlogo v projektu imajo napredna (ang. *front runner*) mesta, ki v praksi že uspešno izvajajo koncept na naravi temelječih rešitev, tako da aktivno delujejo po načelu transdisciplinarnosti, načrtujejo od spodaj navzgor ter imajo odprt in ustvarjalen dialog z različnim deležniki. Genk, Glasgow in Poznan, napredna partnerska mesta, so zgled drugim mestom sledilcem (oblikovani sta dve skupini sledilskih mest: hitri sledilci in sledilci), saj s participativnim soustvarjanjem, medsektorskim sodelovanjem in dovršenimi tehnološkimi rešitvami načrtujejo in upravljajo ustrezne prostorske ureditve. Rešitve naprednih mest so v projektu podrobno obravnavane tudi zato, da se oblikujejo in opredelijo kazalniki vrednotenja na naravi temelječih rešitev, proučijo, prevrednotijo in razumejo procesi načrtovanja in vzpostavijo uspešni modeli finančnih mehanizmov teh rešitev. Pro-

jekt predvideva razvoj mehanizma za spremljanje in ocenjevanje učinkovitosti izvajanja na naravi temelječih rešitev z uporabo kazalnikov vpliva (prilagajanje podnebnim spremembam, zdravje in dobro počutje ljudi, socialna kohezija, potencial gospodarskega razvoja in priložnosti za zeleno podjetništvo) in meril ocenjevanja (stroškovna učinkovitost, politična vpletenost, vključevanje interesnih skupin). Ta mehanizem bo zasnovan na podlagi že izvedenih na naravi temelječih rešitev naprednih mest in se bo uporabljal za merjenje napredka pri doseganju ciljev na različnih stopnjah izvajanja teh rešitev.

Napredna mesta v okviru projekta v različnih razvojnih stopnjah obravnavajo nekaj različnih izzivov. Za ponazoritev, Genk se v projekt aktivno vključuje z načrtovanjem in izvedbo projekta Schansbroek v dolini Stiemerbeek, s poudarkom na vpogledu različnih deležnikov v proces načrtovanja in vrednotenja rešitev projekta. Gre za nekdanje izrazito industrijsko območje z izjemno kulturno raznolikostjo prebivalstva. Urbanizirani del doline povzroča onesnaženost vode, slabšo zmožnost uravnavanja nivoja podtalnice in posledično izgubo biotske raznovrstnosti območja. Zato je sanacija vodnega sistema v obliki renaturacije ključni korak in izziv. Na naravi temelječa rešitev predvideva linijsko zasnovo večfunkcionalnega parka vzdolž vodnega kanala. V deževnih mesecih je območje varovalni protipoplavni pas naselja, v suhem obdobju pa zasnova elementov zelene in modre infrastrukture ponuja prostor za rekreacijo. Območje je ekološko pomembno, zato bo ureditev izboljšala biotsko raznovrstnost in prostorsko degradacijo. Ker gre za zelo zahtevne tehnološke rešitve, bo Genku s projektom Connecting nature med drugim omogočeno iskanje inovativnih modelov participativnega financiranja. V družbenem smislu pa je na naravi temelječa rešitev parka Stiemerbeek zgled za druge rešitve, saj v svojo zasnovo vključuje vidik rekreacije, spodbuja koncept trajnostne mobilnosti, omogoča biotsko raznovrstnost in je zgleden primer vključevanja deležnikov in soustvarjanja javnega prostora. Kaže način, kako je mogoče raznolikost prebivalstva kljub kulturnim oviram izkoristiti kot sredstvo soustvarjanja, povezovanja in zagotavljanja družbene povezanosti.

Slika 1: Kanal v območju Schansbroek (vir: domača stran projekta)

Na naravi temelječe rešitve niso omejene le na večja večfunkcionalna območja. Genk se v Connecting nature vključuje tudi s projektom Beeplan, pri čemer z mrežo ustreznih območij zagotavljajo čebelam prijazno mesto. V projekt je vključena mreža različnih deležnikov, ki so zgleden primer razvoja projekta od pobud in soudeležbe posameznikov do učinkovitega upravljanja. Glasgow na primer izvaja projekt Stalled spaces. Ker ugotavljajo, da so številna zemljišča v mestu onesnažena, stroški sanacije takih degradiranih zemljišč pa zvišujejo stroške gradnje objektov ali komasacij, iščejo rešitve z začasnimi rabami zemljišč, ki naj, če je le mogoče, k izboljšanju okolja doprinesejo z na naravi temelječimi rešitvami. Projekt omogoča prebivalcem uporabo zemljišč z začasno rabo, kar prinaša koristi skupnostim in omogoča racionalno izrabo prostora. Skupnost tako soustvarja prostor glede na potrebe soseske, pri tem pa se upoštevajo lastnosti degradiranega zemljišča. Po takem konceptu so lokalni prebivalci Glasgowa prevzeli že več kot 100 območij, kjer potekajo različne začasne rabe, kot na primer vrtnarjenje v visokih gredah, urbane telovadnice, otroška igrišča in prostori umetniških udejstvovanj.

Poznan v okviru projekta obravnava učinke podnebnih sprememb, zlasti vročinskih valov in poplav. Gosto naseljeno mestno središče zaradi neprepustnih urbaniziranih tal omejuje zmožnost zadrževanja vlage v suhih mesecih, kar ustvarja neustrezne mikroklimatske razmere v mestu. V času intenzivnih padavin pa se zaradi slabše sposobnosti odtekanja vode prebivalci spoprijemajo s poplavami, kar negativno vpliva na kakovost življenja. Zato na opuščenih, neizkoriščenih in degradiranih območjih v stanovanjskih območjih predvidevajo načrtovanje t. i. žepnih parkov. Parki bodo mesto povezali z zelenimi koridorji, izboljšali mikroklimatske razmere, zagotovili možnost rekreacije in druženja prebivalcev, prepustna tla pa bodo razbremenila pritisk meteorne vode na infrastrukturo za odvodnjavanje.

Naprednim mestom v projektu sledijo partnerska mesta, željna znanja in izkušenj s področja na naravi temelječih rešitev. Projekt Connecting nature bo tako lahko omogočil prenos in uporabo znanja na različnih področjih in v različnih fazah rešitev.

Slika 2: Začasna raba v mestu Glasgow (vir: domača stran projekta)

Slika 3: Žepni park (vir: domača stran projekta)

Ker je soustvarjanje prostorskih rešitev eden od pomembnih vidikov koncepta na naravi temelječih rešitev, so trenutne aktivnosti Urbanističnega inštituta Republike Slovenije (UIRS) usmerjene v raziskovanje vprašanj razumevanja procesa soustvarjanja odprtih prostorov, pomena vključevanja različnih deležnikov ter prednosti in slabosti soustvarjanja prostora s prebivalci glede na različne faze vključevanja. Da bi zajeli celovit pregled, bodo v naslednjih fazah poudarki tudi na proučevanju vloge vladnih organov in načrtovalcev v procesu načrtovanja, vodenja in usklajevanja načrtovanja, pomena celovitega načrtovanja in načinov soudeležbe deležnikov. Na UIRS razvita generativna spletna platforma GIS, kot sklop orodij za pomoč pri izvajanju sodelovanja javnosti v procesih urbanističnega načrtovanja, bo v projektu Connecting nature preizkušena z vidika zainteresiranosti deležnikov (uporabnik, načrtovalec, državni organ) za uporabo participativnih orodij GIS, kakšen rezultat je lahko dosežen in kako je lahko orodje koristno v posamezni fazi procesa (načrtovanje, izvedba, upravljanje in spremljanje stanja). Raziskovanje se usmerja tudi na vprašanja: Kdo v procesih soustvarjanja na naravi temelječih rešitev moderira, vodi proces? Kdaj je proces soustvarjanja končan? Kako merimo uspeh ali neuspeh na naravi temelječih rešitev? Poleg vprašanj vključevanja in optimizacije javnosti so aktivnosti UIRS vezane tudi na razvoj in preverjanje družbenih meril in kazalnikov v procesu načrtovanja in razvoja mest z vključevanjem na naravi temelječih rešitev, pri čemer je naš doprinos viden skozi razvoj koncepta nosilne sposobnosti prostora za izvajanje rešitev z vidika uporabe prostorov in trajnostne rabe virov.

Živa Ravnikar, Urbanistični inštitut Republike Slovenije
E-naslov: zivar@uirs.si

Barbara Goličnik Marušić, Urbanistični inštitut Republike Slovenije
E-naslov: barbarag@uirs.si

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Maryam AMAN
Abdul WAHEED
Malik Asghar NAEEM
Syed Akhtar Ali SHAH

Implementing the living streets concept by transforming streets in the central business district of Peshawar, Pakistan

The idea of living streets has recently evolved and is currently being considered in urban planning and development for cities. The main purpose of the living streets concept is to provide safe access for all types of traffic, thus focusing on the overall sustainability of a city. This study investigates the characteristics of urban arteries in Peshawar's central business district (CBD) from the perspective of the living streets concept to form a basis for policy measures that can be adopted to improve the CBD. The study hypothesizes that the living street infrastructure in the CBD does not accommodate the needs of various users (shoppers, residents, employees and those visiting for recreation). A field survey, including an observational survey and questionnaire, was conducted to identify and analyse basic public infrastructure in the CBD. Issues such as noise, air pollution, litter, a lack of appropriate public transit and pedestrian infrastructure, and poor traffic management were discovered. Strong dissatisfaction was recorded when the respondents were asked about current pedestrian and on-street parking arrangements. The field survey also found that the current pedestrian arrangements were insufficient for pedestrian needs, and the absence of street furniture discouraged community engagement in the study area.

Keywords: living streets, pedestrian safety, liveability, pedestrianization, accessibility, central business districts, sustainability

1 Introduction

Liveability is an integral part of the concept of sustainable urban development (Dempsey et al., 2011). Promoting walkability and accessibility with multiple modes of transport is a main objective of the transportation sector associated with liveability and sustainability (Victoria Transport Policy Institute, 2010). This demonstrates the vitality of walkability for the liveability component in promoting an environmentally friendly and sustainable setting and shaping a liveable place (Shamsuddin et al., 2012). In 2013, UN-Habitat presented the idea of city prosperity, which means a city must have "prosperous streets" as public spaces to encourage social engagement and safety, improve economic and ecological sustainability, and provide accessibility for motorized and non-motorized traffic (UN-Habitat, 2013). The liveable city places great emphasis on introducing sustainable means of transportation to reduce air pollution and noise and to encourage residents to walk. This promotes walkability, which can be achieved by incorporating living streets into the city (Lennard, 2008). The ultimate objective of introducing living streets is to make the city safe and accessible (Dempsey et al., 2011). This concept helps make alternative transport options appealing and encourages authorities to transform public spaces. This ultimately makes the streets safer and vibrant for the community (Dumbaugh & Gattis, 2005). The World Health Organization has reported that globally approximately fifty million people are injured and 1.2 million killed in traffic accidents every year. This report anticipates an estimated rise of 65% over the next twenty years if there are no new interventions to prevent collisions (Gulzar et al., 2012). Today's roads are not designed as mono-functional entities for use by automobiles alone. They are designed to simultaneously serve multiple modes of transport, such as cycling, walking, and driving (Pojani & Stead, 2015). However, in Peshawar the road network only serves vehicular traffic because the roads have been designed as mono-functional routes and often lack basic equipment (Borthakur, 2017). People face obstructions such as encroachments and illegal parking, which restrict their mobility in the CBD. Hence this research analyses the current infrastructure in the CBD from the perspective of the living street concept. The study hypothesizes that living street infrastructure in Peshawar's CBD does not accommodate various users (shoppers, residents, employees and those visiting for recreation).

2 Features of a living street

Living streets, also known as complete streets, aim to provide a transportation system that accommodates all users, including pedestrians, cyclists, and drivers. Living streets have elements such as bicycle lanes, pedestrian spaces, street furniture, traffic calming measures, medians, and pedestrian crossings. Creating a natural, functional, and pleasing streetscape is crucial for creating any living street (Burden & Litman, 2011).

There is no universal design layout for living streets; each layout is distinctive and exclusively caters to its community and its context. The layout of a living street may comprise dedicated bus lanes, pavements, bicycle lanes, median islands, public transit stops, pedestrian signals, crosswalks, curb extensions, narrower lanes, roundabouts, and other such elements (Bain et al., 2012). Over the past few decades, the idea of Living Streets has evolved and is now being considered in urban planning and design around the globe (Chourabi et al., 2012). The concept of living streets is not limited to providing pavements and bicycle lanes; instead, it focuses on the overall sustainability of the city. When designing living streets, focus is shifted toward a micro-scale, which allows urban planners and designers to focus on pedestrians and pavements and to encourage high-density neighbourhoods. This, in turn, prompts residents to choose to walk and cycle rather than drive. Living streets make neighbourhoods safer, more functional, comfortable, and accessible, which encourages interpersonal interactions that help in community development (Gehl, 2013).

Promoting a healthy environment, improving neighbourhood conditions, community development, and encouraging people to use public spaces – these are the core elements of the living streets concept that urban designers and urban planners all around the world are working on (Carmona, 2010; Gehl, 2011). Furthermore, living streets help in designing a more sustainable city to reduce pollution and promote health and happiness among residents (Farr, 2011). Moreover, quality of life is a very distinctive component of liveability; these two concepts are usually used synonymously because they are strongly interlinked. Therefore, taking into account the quality of life is critical when developing a framework for living streets based on the idea of liveability (Miller et al., 2013). The association between these two components demonstrates that there is a profound affiliation between various characteristics of situations and places that affect overall place-making efforts (Appleyard et al., 2014). The literature has pointed out a number of elements of living streets that play a significant role in improving the dynamics of a city and its living conditions. However, not every element can be incorporated into every city because different cities face different urban issues (Eckerson, 2010).

The majority of researchers believe that introducing bicycle lanes in a city is the best way to improve the cityscape because these help reduce automobile dominance in the area (Barnett, 2018). Not only do bicycle lanes reduce automobile dominance, but they also help reduce pollution and congestion,

making the city more accessible and environmentally friendly (Bain et al., 2012). A neighbourhood's streetscape is an ecosystem in itself, comprised of the economic system of the neighbourhood, a social system, urban forestry, and a transportation system along with many other systems. The ecosystem of a streetscape mimics nature and builds reciprocal associations in an interconnected system to improve the local economy, natural environment, and resources of the neighbourhood and its inhabitants in a sustainable manner (Pucher & Buehler, 2011). Benches, lighting elements, landscaping, and trees are also part of a streetscape. They play a vital role in making streets vibrant and add a dynamic element to the neighbourhood. The use of native plants is crucial to a streetscape because local plants grow best in their local environment. Providing seating for pedestrians boosts the local economy and makes streets lively for local residents, giving them a place to walk around, meet friends, shop, and spend leisure time (McPherson et al., 1999). Modern planning often neglects the importance of pedestrianized streets because it focuses on reducing interference from pedestrians on the street. This can easily be achieved by introducing raised pedestrian pavements, constructing pedestrian areas inside courtyards, and other options that ensure that pedestrians are off the streets. Living streets, on the other hand, focus on bringing people back to the streets by designing public spaces in a manner that is attractive for pedestrians (Bain et al., 2012). Similarly, providing street furniture has proven to encourage pedestrians to use the streets more because street furniture creates a friendly environment for non-motorized travel in the neighbourhood (Soltani & Bosman, 2005). The most common elements of street furniture are bollards, benches, news racks, kiosks, public art, flower planters, refuse receptacles, pavements, restrooms, and parking meters. These elements improve the dynamics of street life because they make cycling and walking more appealing. The placement of street furniture depends on the layout of lights and trees, which determine the pattern and rhythm of the street (Dempsey et al., 2011).

2.1 Selected case studies of implementing living streets

The following section examines various cities where the concept of living streets has been implemented. New York is one of the most successful examples of living streets. Although Peshawar is not similar to New York in terms of its population and area, the urban fabric of Peshawar is similar to that of New York. The administration of New York was successful in implementing various elements of living streets such as street furniture and restricting vehicles to encourage pedestrian traffic. Kuala Lumpur, on the other hand, has urban issues that are similar to those in Peshawar, which proved helpful in assessing CBD users' needs in Peshawar.

2.1.1 Transformed public spaces in New York

Pedestrian plazas and "street porches" have been created throughout New York and have replaced parking along the streets. These plazas have been designed to attract people by making use of shade and seating elements. New York has modified most of its vehicle-dominant intersections and replaced them with street porches, which have helped calm traffic and create safer pedestrian routes (Hou, 2010; Shaftoe, 2012). In high-density areas, some streets are completely closed off to vehicular transport and are filled with street furniture, which is essential for street porches where people can sit and relax. Very dense areas have few or no open spaces, which is why these pedestrian plazas provide a space for residents to socialize (Gehl, 2013). These measures can also be implemented to improve the socioeconomic conditions in Peshawar's CBD.

2.1.2 Streets in Asian cities: walkability in Kuala Lumpur

Several studies conducted in Kuala Lumpur have concluded that tourist destinations are quite comfortable for walking but smaller streets have limited space for pedestrians, which affects tourists' overall experience because cars dominate most city streets (Sreetheran et al., 2011). The studies further demonstrated that, in order to create a living street in the city, lighting and crossing infrastructure must be enhanced to improve safety at night and during the day. Other features required to provide pleasant walking for tourists and locals were shaded and wider pavements. Studies have also shown that safe and comfortable walking are the two most essential elements for improving pedestrians' walking experience in the city centre (Zakaria & Ujang, 2015). This study highlights various elements that are necessary for implementing living streets such as lighting and crossing infrastructure, in addition to shaded and wider pavements.

2.1.3 Living streets in India

Efforts to promote walkability and pedestrian infrastructure in six Indian cities in partnership with the Asian Development Bank have shown that large-scale projects other than improving transport are required to transform urban streets (Leather et al., 2011). Follow-up studies observed that, although small-scale projects are being carried out to improve walkability in various cities in India, no large-scale projects are planned for this. Apart from improving a few miles of pavements, no major interventions are planned; instead, the development sector is mostly focusing on expanding roads for automobiles and public transport (Datey et al., 2012). Improving public transport is a waste of capital because accessibility of public transport is not being improved and can result in a decline in ridership for

the new infrastructure being developed (Leather et al., 2011). Underpasses and pedestrian overpasses thirty-three feet long are planned in Surat. In Chennai, the principles of living streets have been adopted by the ITDP (Institute for Transportation and Development Policy) to design bicycle routes for a pilot project in the city. The draft master plan proposes wider pavements along residential and major commercial streets, and seeks to preserve pavements from encroachment by hawkers, vendors, parked vehicles, electrical transformers, hoardings, and other elements. In Pune, IIT-Delhi and CIRT have proposed a master plan for constructing a bus rapid transit system incorporating underpasses for pedestrians along the pilot corridor. Overpasses are also part of the project (Bhattacharyya & Mitra, 2013). This case study is important because the cultural and social setup of Pakistan and India is almost the same and the issues faced by users in the CBDs of both countries are similar. It can be concluded from this case study that small-scale projects cannot improve pedestrian accessibility, and a holistic approach needs to be implemented for this purpose.

2.2 Public space planning and use in Peshawar, Pakistan

For more than two decades, Peshawar, the capital of Khyber Pakhtunkhwa (KPK), has been facing issues such as congestion, increasing road accidents, air pollution, litter, and noise due to urbanization (Hashmi, 2016). The population of Peshawar has increased exponentially over the past decade for various reasons, such as an influx of internally displaced persons, natural population growth, and mass migration due to political unrest. This has led to an unprecedented increase in car owners, resulting in air pollution, noise, increased fossil fuel consumption, and collisions. Apart from urbanization, Peshawar also has been the sole sanctuary for Afghan refugees and Pakistanis internally displaced by the political unrest in the country for more than two decades. Natural population growth along with an influx of Afghan refugees and internally displaced locals is the main cause of Peshawar's rapid population growth. This population growth demanded a well-designed road network, which the city administration provided by building major arteries throughout the city (Peshawar Development Authority, 2017). However, these arteries only serve cars because they were designed as mono-functional roads (Borthakur, 2017). The last forty years have seen a substantial population increase, as well as more cars and the expansion of road networks. This has increased the risk of collisions (Hyder et al., 2000). The total number of collisions in Pakistan in 2010 and 2011 was 9,723; of these, 2,722 occurred in KPK (Pakistan Bureau of Statistics, 2012). In contrast, in 2015 and 2016, the total number of collisions fell to 9,100, of which 4,287 occurred in KPK (Pakistan Bureau of Statistics, 2012). Although the overall statistics fell over the five years, the number of collisions almost doubled in KPK.

In Peshawar, street design has always tended to facilitate vehicles. This contradicts the concept of liveable and sustainable streets, which supports various modes of transport on a single street and prioritizes pedestrians walking and experiencing the street as a public space (Gulzar et al., 2012). Although the Urban Policy Unit of Peshawar is working on urban development projects to improve the situation, its projects lack a holistic approach and some design aspects associated with principles of sustainability, such as equity and equality, improved quality of life for CBD users and an enhanced environment. These elements need to be integrated into Peshawar's CBD so that the overall socioeconomic prosperity of the study area can be improved by accommodating users of various modes of transport.

3 Materials and methods

This study was conducted using qualitative and quantitative research methods. Data were collected to analyse the streets in Peshawar's CBD. The mixed research method was used because this method was appropriate for answering research questions about the major arteries in the CBD and also helped explain the reasons behind the situation. The aim of this research is to improve the traffic situation in Peshawar's CBD so that non-motorized traffic needs are also met, in which identifying streets that need to be converted into living streets depends on the specific characteristics of each street. A field survey, including an observational survey and questionnaire, was conducted at various locations in the study area to identify and analyse its basic characteristics. A satisfaction index was used to analyse the conditions of the study area and users' satisfaction with various elements.

- Field survey and observation: The characteristics of streets in Peshawar's CBD differ, and so the characteristics causing the situation in the study area to deteriorate further were identified. This involved field visits and taking photos. These qualitative data helped in understanding the situation in the study area with a checklist devised using indicators identified based on a literature review. Indicators considered for preparing the questionnaire included street activity, major trip generators, street patterns, accessibility, parking issues, cycling issues, pedestrian routes, lighting, safety, street furniture, and cleanliness (Majeed, 2012; Nilles, 2016). These indicators were selected for their relevance to the study.
- Questionnaire: The questionnaire helped determine the socioeconomic status of the local people, their concerns about the current situation and their preferences for a

living streets model in the study area. Because the spatial segment selected for the survey was a part of the commercial hub of the city, the sample size was calculated based on the formula given by Krejcie and Morgan (1970). The sample size for this study was 123 for this formula. The confidence level for this survey was 95% so that the accuracy of the research would not be compromised. The sample comprised people visiting the study area; they were selected through systematic random sampling to avoid bias. Every tenth person was asked to complete the questionnaire developed for primary data collection.

- Satisfaction index: Satisfaction was calculated using the satisfaction index first developed by Yeh (1972); this index was used in this study to compare respondents' satisfaction regarding parking in the study areas. A score of +1.00 indicates complete satisfaction; 0.00 indicates acceptable satisfaction, and −1.00 indicates dissatisfaction (Yeh, 1972, 1975). This index has been used in various studies (Anwar et al., 2008) and has proven effective in reflecting levels of satisfaction or dissatisfaction (Abdu et al., 2014). Variables such as pedestrian routes, parking, cycling infrastructure, pedestrian infrastructure, its accessibility and maintenance, safe crossings, traffic calming measures, plants as buffer zones, street furniture, safety, and cleanliness were used to measure users' satisfaction. Assessing users' satisfaction helped in understanding their needs and requirements for improving accessibility.

Data from the field survey and observational survey were entered into Statistical Package for the Social Sciences (SPSS) for analysis. The frequency of responses was assessed. The tabular results of the SPSS analysis were converted into graphic form using MS Excel. The satisfaction index was then applied to analyse respondents' satisfaction with safety, visibility, ease of use, and other indicators. This index was also used to analyse respondents' priorities concerning potential future street furniture, crosswalks, improved pavements, and so on.

4 Peshawar case study: results and discussion

In terms of traffic conditions, Peshawar is one of the most congested and polluted cities in Pakistan. Excessive traffic on small roads and the encroachment of markets has increased congestion on the already busy road network, making walking impossible for pedestrians, especially children and women, because pavements are mostly occupied by street vendors. This has played a significant role in increasing air pollution and noise in the city because there are few green areas (Ali et al., 2012). Due to high population growth, there is rapid growth in the number of vehicles registered every year (The Urban Unit, 2016). Furthermore, non-motorized modes of transport, including walking, constitute only 2% of the total modal split. The reasons for such a small percentage of pedestrians and other non-motorized modes of transport are deficiency of suitable infrastructure (pavements and pedestrian signals), safety concerns due to a poor traffic control system, few or no connections between the public transport network and various urban land uses through pedestrian infrastructure, and inadequate enforcement by the authorities (The Urban Unit, 2016).

Data from 2003 to 2012 show that the number of collisions in commercial areas like the Saddar neighbourhood increased over ten years. Thirty-nine fatal road accidents and 155 non-fatal accidents were reported in the Saddar area during this period. Forty fatalities resulted due to these accidents, of which 70% were pedestrians. Moreover, 189 people were injured in non-fatal accidents, 50% of whom were pedestrians (Shah, 2014). The evidence indicates that mobility is strained due to poor accessibility and connectivity of various land uses, the predominant socioeconomic dynamics of the region, unpremeditated city planning, and deficient public transport infrastructure. This is why it is important to understand the current situation and concerns of the people in the study area (The Urban Unit, 2016). The commercial area selected for this study was Peshawar's Saddar neighbourhood, which is the largest commercial hub of the city, measuring 17.5 hectares. Figure 1 shows the roads (Saddar Road running from northeast to southwest) that were chosen for the field survey.

The questionnaire helped in collecting demographic data from respondents, shown in Figure 2. Figure shows that the majority of visitors to the study area were male. The mobility of females was limited in the commercial area and was quite apparent because less than one quarter of the respondents were females. The main reason for this gender inequity in the commercial area was the poor conditions of pedestrian routes, as cited by many female respondents. Perhaps the female-to-male ratio would increase if conditions in these commercial areas were improved. More than half of the respondents were between twenty and forty years old, whereas a very negligible percentage of people over sixty were seen and interviewed in the study area. Table 1 shows the results of data collected during the observational survey. Various elements of selected segments of study area were observed, including street activity, parking, pavements, crosswalks, street shoulders, traffic conditions, street furniture, bicycle/motorist parking spaces, and cleanliness.

A situational analysis of the Saddar neighbourhood was carried out, showing that a variety of commercial uses were present, including offices, retail and wholesale shops, restaurants,

Figure 1: Map of study area (source: Google Maps, 2019).

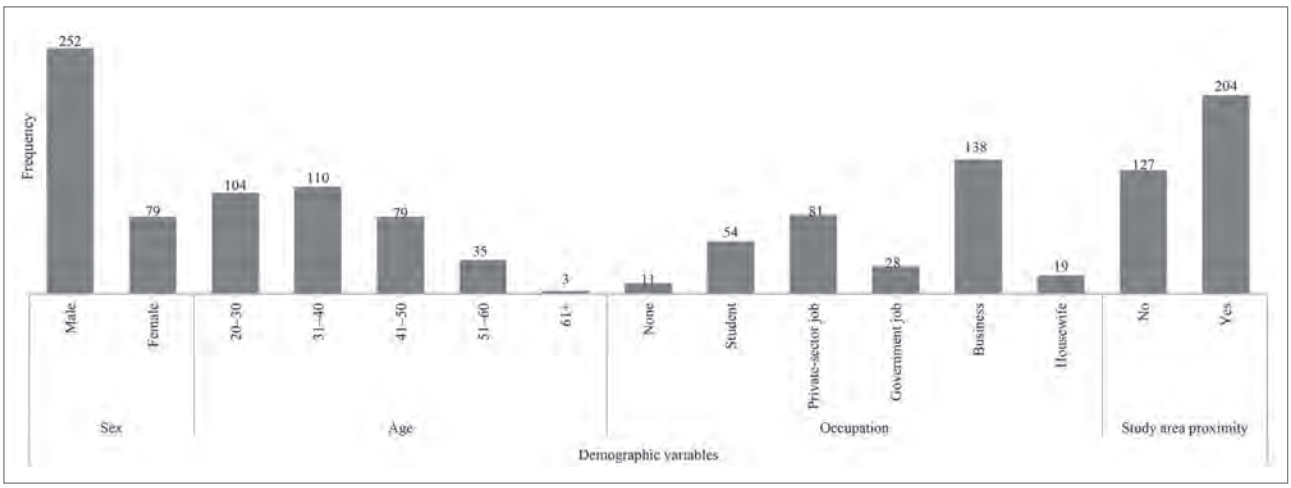

Figure 2: Demographic profile of respondents (source: field survey).

Table 1: Availability assessment of basic road and traffic characteristics.

Activity	Attribute	Yes/No
Street activity	Street cafe / outdoor seating	No
	Encroachments by street vendors	Yes
	Pedestrian signage	No
Traffic	Traffic speeds compatible with pedestrian safety	No
	Basic traffic calming efforts	Yes
	Extra traffic calming measures	No
	Conflicting conditions between various modes	Yes
	Vehicular speed for safe walking	No
	Risk of pedestrian collision	Yes
	Separate mode availability	No
	Bus stops	No
	Transit links	No
	Pedestrians leaving buses conflict with vehicles, etc.	Yes
Median strips / crosswalks	Intersections with curb extensions or pedestrian refuge islands	No
	Median strips	No
	Crosswalks	No
	Adequate lighting	No
Street shoulder	Designated shoulder	No
	Overpass /underpass for crossing road	No
	Drainage for rainwater runoff	No
	Marked parking spaces on shoulder	Yes
Parking	On-street parking	Yes
	Off-street parking	Yes
	Parking creates buffer	Yes
Bicycle/motorist parking	Separate bicycle lanes	No
	Bicycles on road	Yes
	Conflicts between drivers and pedestrians	Yes
Pavements	Adequate separation between vehicular traffic and pedestrians	Yes
	Pedestrian crossings available	No
	Measures needed for safe crossing	Yes
	Adequate lighting for pedestrians	No
	Safety concern during peak time	Yes
	Building entrances accessible	Yes
	Pavement continuity	No
	Obstructions on pavement	Yes
Street furniture	Sidewalk furniture	Yes
	Amenities (dustbins, benches, etc.)	No
	Streetlights and traffic signals	No
	Plants	No
	Taxi stands	No

Source: field survey (2018).

healthcare facilities, museums, places of worship (mosque, church, and temple), and shopping plazas. After carrying out an empirical investigation of the selected segment of the study area, it was determined that there is little or no street activity in terms of street cafes, outdoor seating for pedestrians, and availability of newspaper racks. These are the main activities that make a commercial area vibrant and attract people from the surrounding neighbourhood, which eventually leads to social equity and economic vitality of the CBD. In the study area the pedestrians sat on the pavement, creating obstacles alongside vendors' carts also crowding the already narrow pavement (Figure 3).

Figure 3: Encroachments on pavements (source: Maryam Aman).

No traffic signals were observed in the study area; this can be linked to the many accidents that have occurred in this area. During the public opinion survey, the majority of respondents expressed dissatisfaction with pedestrian infrastructure. No signage for drivers or pedestrians was visible, which is another important factor in collisions between vehicles and pedestrians. The corner radius in the study area was quite wide, which encourages high-speed right turns, leading to collisions between vehicles and pedestrians. Respondents were highly concerned about poor traffic management in the study area and felt that many problems could be resolved through diligent enforcement of traffic rules. Only the most basic traffic calming measures were seen in the form of speed bumps; other measures such as pedestrian refuges, curb extensions, or median islands were absent. Figure 4 shows only a narrow divider separating two lanes of traffic.

Figure 4: Traffic management situation (photo: Maryam Aman).

This situation called for the introduction of additional traffic calming measures because there were no signals for vehicles or pedestrians in the study area, increasing the risk of collisions with pedestrians. Introducing table-tops and median islands has become common practice internationally because it facilitates pedestrian traffic and helps in avoiding traffic collisions. As shown in Figure 5, on-street parking was being utilized to its full capacity all day long in a selected segment of the study area. This created a buffer zone between pedestrians on the pavement and vehicles on the road, which made it easier to walk on the pavement but quite difficult to cross the road in heavy traffic. Off-street parking was available at multiple locations, which was also being used to its maximum capacity. The maximum use of on-street and off-street parking reflects the heavy use of cars in the locality. Use of private vehicles in commercial zones is discouraged globally and pedestrianization is being encouraged, and introducing public transit in the study area will play a major role in reducing the use of cars.

Improving public transit would play a vital role in decreasing car use in this area. There were no on-street handicapped parking spaces in the study area, which is a major concern because the current parking does not accommodate handicapped drivers. Perpendicular and angled on-street parking was observed in the study area; although this provided a buffer zone for the pedestrians, it also occupied a substantial portion of the road. This poses a threat to drivers as well as oncoming traffic due to limited visibility of drivers exiting the angled parking spot. Parallel parking can also serve as perpendicular parking for two-wheelers. Introducing pavements in urban centres plays a major role in improving the dynamics of a city by improving living conditions (Seskin & McCann, 2012). The condition of pavements was quite poor because major surface problems were observed in these areas. Poor conditions of pavements made it quite difficult for pedestrians, as stated by the respond-

ents. The ramps at the ends of each pavement were quite steep, which made it difficult for people in wheelchairs to use the pavement. The width of the pavement in the study area was approximately four to five feet and pedestrians faced difficulty walking because encroachment by vendors and shopkeepers obstructed the pavement and left little or no space for pedestrians.

Concerning street furniture, no amenities or open spaces were provided in the study area. Huge billboards were displayed at every shopping plaza, which respondents felt was a distraction for drivers and could cause collisions between pedestrians and vehicles. The markings for the on-street parking spots were worn and needed repainting to distinguish the parking spots from the street. Street furniture plays a significant role in attracting people to the CBD by creating a friendly environment for visitors. This leads to improved community development and better socio-economic conditions of the CBD and the city as a whole. The overall cleanliness was quite poor, which can be linked to pollution in the study area, as shown in Figure 6. Provision of dustbins in the study area was demanded by the respondents because this element of street furniture will help reduce pollution.

Living streets are predominantly based on the concept of providing all the elements needed by users. On-street parking is one of the most important components of living streets in a commercial zone (Bain et al., 2012). Figure 7 shows respondents' satisfaction with parking in the study area. Strong dissatisfaction was recorded regarding on-street parking. The main reason for this was insufficient on-street parking in comparison to the heavy influx of traffic. Even people living nearby drove to the commercial area because the public transport system was insufficient and people preferred to drive. Difficulty crossing the road was another reason that demonstrated the failure of traffic-calming measures; this calls for measures to solve the problems related to heavy traffic in the study area.

In addition, over half of the respondents were dissatisfied with walking and crossing the road in heavy traffic, as shown in Figure 7. There were no traffic signals directing drivers when to stop and let pedestrians cross. Over half of the respondents expressed satisfaction with walking on the pavement. Because on-street parking was located right beside the pavement, it gave pedestrians a sense of safety during heavy traffic. Pavements were provided along the line of shops in the study area, making it easy for visitors to go from one shop to another. The respondents were also fairly satisfied with the street crime situation and walking on the pavement at night; over two-thirds of the respondents felt the area was safe. Because the study area had mixed land uses, some activities were still underway in the evening, making it safe for people even at night. In addition,

Figure 5: Commercial area parking (photo: Maryam Aman).

Figure 6: Lack of cleanliness (photo: Maryam Aman).

Figure 7 shows that more than half of the respondents were dissatisfied with the current pedestrian infrastructure. Although the respondents were satisfied with walking on the pavement, they were not happy with its infrastructure. The main issue with the pedestrian infrastructure was that it was not continuous and did not accommodate wheelchair users visiting the study area. The ramp of the pavement was also very steep at the ends, which made it difficult for the elderly and people in wheelchairs to use the pavement. The standards provided for ramp angles should be applied in the study area to encourage people of all ages and abilities to access the CBD. Figure 7 shows respondents' satisfaction with the current infrastructure in the CBD. Negative values show dissatisfaction, and positive values show satisfaction.

Living streets focus on bringing people back to the streets by improving seating options with public spaces designed to be attractive for pedestrians (Bain et al., 2012). Pavements play a major role in facilitating pedestrian movement. When designing a pedestrian route, it should complement the surrounding streetscape and avoid cutting across streets (Bain et al., 2012). Data were collected from respondents on the current pedestri-

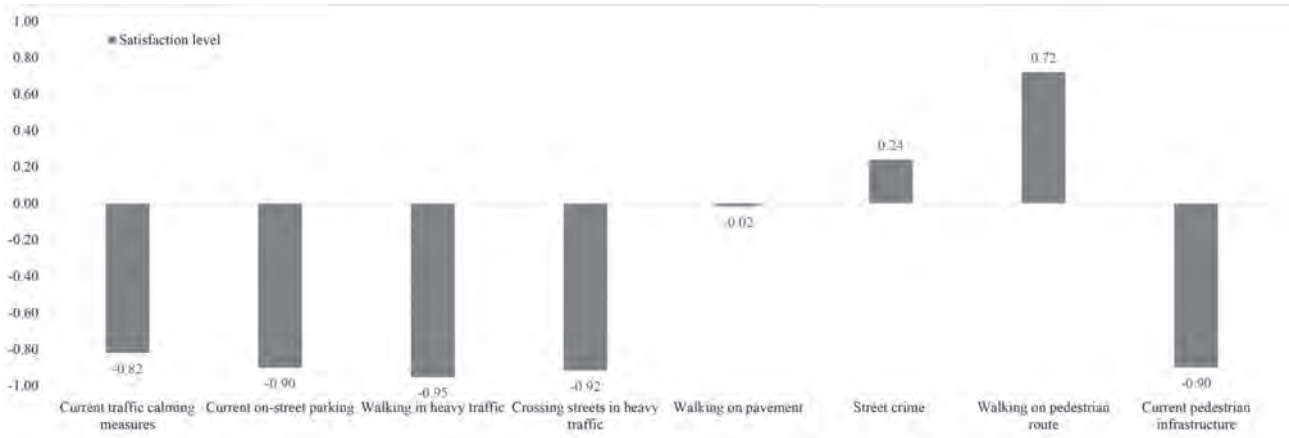

Figure 7: Public satisfaction with current infrastructure in the CBD (source: field survey).

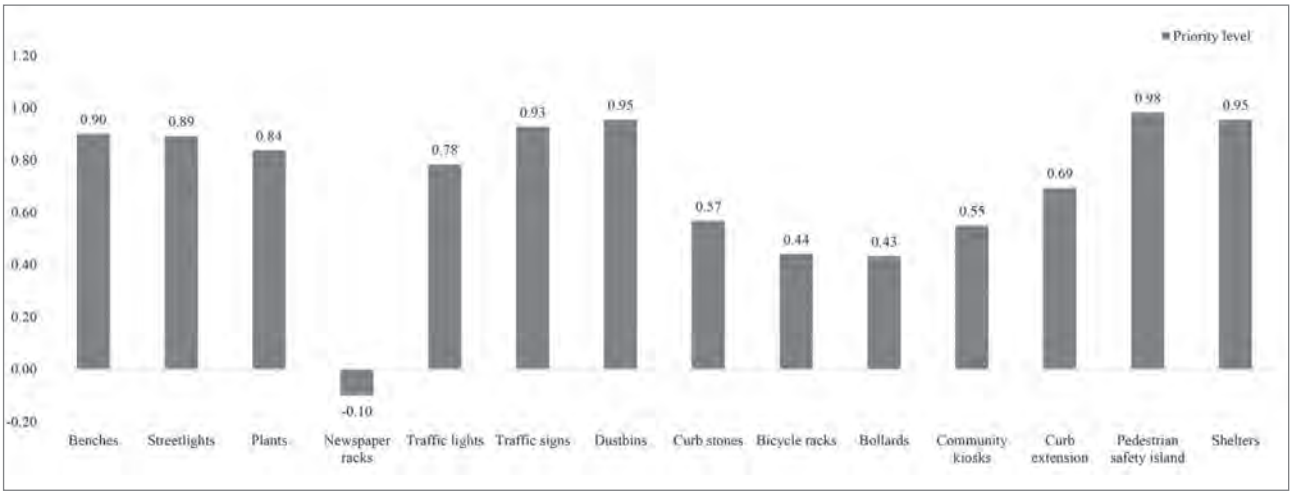

Figure 8: Public priorities for living streets in the CBD (source: field survey).

an routes. This study shows that high-speed vehicles and a lack of zebra crossings are some of the greatest problems encumbering pedestrians in the commercial zone. These factors can be attributed to the insufficiency of pavements in the study area. The pavements were too narrow for pedestrians to make their way through the crowd. In addition, temporary encroachment by street vendors also makes it difficult for pedestrians to use the pavement. Living streets allow neighbourhood residents to access various social activities, which are encouraged by introducing various street furniture (Bain et al., 2012). Opinions about street furniture were also recorded in the survey. Figure 8 shows the responses regarding future street furniture. The respondents demanded benches and streetlights. Because there were no benches in the study area, several people were seen sitting on the edge of the pavement. This highlights the need for benches and other street furniture.

To create a living street in the city, lighting and crossing infrastructure must be improved to enhance safety at night and during the day (Zakaria & Ujang, 2015). There were very few streetlights in the study area, which resulted in poor visibility at night. This explains the participants' desire for more streetlights. The majority of respondents also wanted traffic lights and traffic signs because there were none in the study area. Most respondents favoured installing dustbins because these were also missing. The absence of dustbins in any commercial zone can create difficulties for visitors due to increased litter, which discourages visitors and makes the CBD less accessible. Over half of the respondents agreed that bicycle racks should be installed. This shows that people are willing to use bicycles for transport. It will also make it easier for them to park their bicycles. Most respondents agreed with installing bollards, community kiosks, curb extensions, pedestrian safety islands, and shelters because there were none. Providing these elements in a CBD can help create a visually and functionally attractive environment for achieving social equity. Figure 8 shows respondents' level of priority for various street furniture.

In addition to walking, cycling is one of the healthiest modes of transport because it helps address several problems related

to the environment and the community, including quality of life, climate change, air pollution, and noise. However, cycling opportunities are limited due to traffic in urban centres (Steinbach et al., 2011). Adopting cycling as a mode of transport was favoured by most respondents if the infrastructure is improved. One-third of the respondents lived in areas not in the immediate vicinity of the study area, and so they did not agree with adopting cycling as a mode of transport due to the distance they would have to cover to reach the commercial hub of the city. Instead, they felt that well-planned public transit was a better option.

The respondents were fairly satisfied with safety while walking on the pavements, but they were not satisfied with safety when crossing the streets because high-speed vehicles dominated the roads. Moreover, respondents were also concerned about poor traffic calming measures. Because there were no curb extensions in the study area, pedestrians found it quite difficult to cross the road in heavy traffic. Introducing curb extensions will ensure safety for pedestrians crossing the road. Almost all of the respondents agreed that appropriate steps should be taken to direct pedestrians to safe crossing points because the increased number of traffic accidents made such measures crucial for visitor safety.

5 Conclusion

This study analysed commercial streets in Peshawar to identify current issues and the potential to create liveable and sustainable urban streets. Peshawar is a city in Pakistan that lacks much infrastructure to meet the needs of all transport modes in its commercial zone. As a result, the city's development is unsustainable, which affects the quality of life for visitors due to issues such as air pollution, noise, poor traffic management, lack of street furniture, poor pedestrian infrastructure, and a lack of cycling infrastructure for CBD users. These issues are not covered in the city's planning documents because they primarily focus on provisions for motorized traffic. This can be attributed to a lack of understanding by the authorities regarding the significance of pedestrianization. The ultimate objective of introducing living streets in a city is to make the city lively and accessible for its inhabitants. This concept will help make alternative transit options appealing to the public and encourage transformation of public spaces, which will ultimately make the streets safer and more vibrant. This study assessed the situation in a major commercial hub of Peshawar, which can serve as a basis for policy measures that can be adopted and implemented to improve the city's environmental and social conditions. This study identified issues related to noise, air pollution, litter, lack of appropriate public transit, poor traffic management, and lack of pedestrian infrastructure for the disabled and senior citizens. This confirms the hypothesis that inadequate infrastructure in Peshawar's CBD has adversely affected overall socioeconomic prosperity.

In conclusion, implementing the living street concept in the study area will help promote healthy communities, better quality of life, and improved neighbourhoods, and it will also encourage local people to transform their public places. Therefore, incorporating living streets into Peshawar's cityscape will help achieve a sustainable environment in the city.

Maryam Aman
National Institute of Transportation, School of Civil and Environmental Engineering, National University of Sciences and Technology (NUST), Islamabad, Pakistan
E-mail: maryamaman09@gmail.com

Abdul Waheed
National Institute of Transportation, School of Civil and Environmental Engineering, National University of Sciences and Technology (NUST), Islamabad, Pakistan
E-mail: drwaheed@nit.nust.edu.pk

Malik Asghar Naeem
National Institute of Transportation, School of Civil and Environmental Engineering, National University of Sciences and Technology (NUST), Islamabad, Pakistan
E-mail: asghar.naeem@nit.nust.edu.pk

Syed Akhtar Ali Shah
Urban and Regional Planning Department, University of Peshawar, Peshawar, Pakistan
E-mail: shahg@uop.edu.pk

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Simon STARČEK
Maruška ŠUBIC KOVAČ

Spatial data quality impacts on the efficiency of the property tax system: The case of construction land fees

Spatial data are directly linked to spatial planning, and to spatial management in general, including the property tax system. Spatial data quality impacts the efficiency of the property tax system, as well as its equity and reasonability. This article presents a methodological approach to analysing the quality of spatial databases managed by municipalities for assessing construction land fees. Adjusted Jaccard and Czekanowski indices were defined and applied for data quality analysis because they are applicable in cases in which differences between the data compared amount to less than 5%. The indices were used to establish the level of matching for areas of buildings and the unbuilt construction land in the municipal construction land fee assessment databases and in the real estate register. Based on an analysis of the completeness, logical consistency, and thematic accuracy of municipal construction land fee assessment databases, municipal databases were updated. Modifications to the municipal databases were analysed following updating in terms of the number of persons subject to construction land fee payment and the construction land fee amount payable. The results of the first study of this type have been obtained on a small sample, but the methodology is also applicable for analysis on a large sample or in all Slovenian municipalities. As such, the analysis may be of help to experts at municipal offices, spatial planners, and decision-makers in taxation policies.

Keywords: spatial management, spatial planning, spatial data quality, property tax

1 Introduction

Spatial data describe the material world from various perspectives, directly or indirectly linking spatial features to locations, thus creating a basis for determining the characteristics of real estate (Yomralioglu et al., 2007; Ažman, 2011). Spatial data are directly linked to spatial planning and spatial management in general (Zakrajšek, 1999). Mangioni (2012), Mantey and Tagoe (2012) and Çağdaş (2013) point out the importance of use of spatial data and GIS technology in establishing and managing a real estate property tax system as part of the spatial management system. They point out that the use of quality spatial data significantly impacts the efficiency of the system and its scope, equity, and reasonability. Droj and Droj (2010) highlight the importance of spatial data for good management and quality decision-making for property tax. Robbins (2014) confirms the positive impact of using spatial data, GIS technology, spatial expertise, and appropriate accessibility and cartographic presentation of real estate data for spatial management, spatial planning, and property tax (Zavodnik Lamovšek et al., 2012). Maher et al. (2005) and Robbins (2014) highlight the role of GIS technology and (horizontal and vertical) linking of various spatial databases at the local and national levels. Jankovič Grobelšek and Gajšek (2014) point out that effective real estate legislation should be based on integrally regulated data from the spatial information system.

Property tax is linked to the requirement for high-quality real estate data. In Slovenia and in many other countries, the property tax systems are undergoing certain reforms. The effectiveness of implementing property tax reforms also depends on the availability of sets of spatial and other data on real estate, and on their quality. The better the accuracy and completeness of the real estate recording system, the higher the level of legal security of legal relations, and the higher the level of confidence in the system and its applicability (Starček, 2017). In dealing with spatial phenomena, a complex and intersectoral spatial data system normally applies, in which data quality is an important factor of the quality and efficacy of the system that applies such data. Thus, as highlighted by van der Molen (2002), special attention needs to be dedicated to ensuring quality and reliable spatial data on real estate that is interconnected and consistent although it is managed as part of different databases.

The study presented here focuses on an analysis of the impact of spatial data quality on the property tax system in Slovenia. Property tax systems are subject to constant changes (Slack & Bird, 2014). The efficacy of reforms and subsequent efficiency of the property tax system also depend on the quality of real estate databases. Like many countries of eastern and central Europe, in Slovenia as well for more than two decades a transition process has been under way from the old area-based property tax system to a new ad-valorem system. In Slovenia, the property tax system has become obsolete, non-harmonized, non-transparent, and unadjusted to new economic conditions (Vlada Republike Slovenije, 2013). The first attempt at introducing the new property tax method was made in 2013 by adopting the Real Property Tax Act (Sln. *Zakon o davku na nepremičnine*, Ur. l. RS, no. 101/2013, 22/2014 – odl. US), which was abolished in its entirety by the Constitutional Court (Ustavno sodišče Republike Slovenije, 2014), principally due to its non-conformity with the constitution. In its decision, the Constitutional Court (Ustavno sodišče Republike Slovenije, 2014) highlighted, among other factors, the need to improve real estate data quality.

The impact of spatial data on the efficiency of the property tax system can be analysed only based on data that are managed by municipalities for assessing construction land fees (hereinafter: the CLF). The CLF is a contribution that, in addition to the property tax under the Civil Tax Act and the forest road maintenance fee, collectively constitutes the property tax that has been in force since 1984. The CLF has been levied in all of Slovenia's municipalities. Since its introduction, the revenue from the CLF has constituted one of the major and most stable public financing sources for the municipalities. Based on income from the CLF, municipalities provide for appropriate development of building land and for economic and social development. According to data from the Ministry of Finance (Ministrstvo za finance, 2017), on average revenue from the CLF amounts to almost 90% of all revenue from the municipal property taxes, or 15% of total municipal tax revenues. Legal entities constitute 4% of all entities subject to CLF payment. The assessment of CLF for business purposes constitutes 70.5% of the total assessment.

The aim of this study was to establish whether improving the quality of municipal CLF assessment databases with data from the real estate register and the cadastre of economic public infrastructure contributed to an increase in the CLF amount payable. The study hypothesized (Hypothesis 1) that the absence of records on buildings and unbuilt construction land in the municipal CLF assessment databases was on average more than 10% higher compared to the status in the real estate register. It was further hypothesized (Hypothesis 2) that data matching for the areas of buildings and unbuilt construction land between the municipal CLF assessment databases and the real estate register was relatively low, which means that the value of the adjusted Jaccard index and of the adjusted Czekanowski index was less than 0.33. It was also hypothesized (Hypothesis 3) that updating municipal datasets with data from the real estate register resulted in an increase in the

number of persons subject to CLF payment and in the CLF amount payable.

2 Spatial data quality and relevant studies

Spatial data tend to be rather diverse in terms of positional quality, temporal quality, or quality of semantic definition of concepts (notions). The definition of the quality of spatial data depends on the discourse, purpose, requirements, and expectations of users and other subjective factors. In general, the quality of spatial data reflects the totality of the characteristics of a database in terms of its capability to comply with the expressed or incorporated set of requirements. There then exists a difference between the data and the material world represented by such data. The greater the difference, the lower the quality of data, and thereby the lower the usable and overall value of such data (Triglav, 2012).

The quality of data is also defined by its purpose, origin, and use, including descriptive and quantitative elements (Morrison, 1995; Veregin, 1999; Šumrada, 2005; Ivánová, 2007). The international and Slovenian standard SIST EN ISO 19157:2015 Geographic Information – Data Quality defines a unified quality model for spatial data and the basic methodology for determining their quality. According to the quality principles of the SIST EN ISO 19157:2015 standard, data quality is the difference between a database and the material or hypothetical world, the "universe of discourse", defined by data specifications. Basic elements of quality, as defined by SIST EN ISO 19157:2015, include positional accuracy, thematic accuracy, logical consistency, temporal quality, completeness, and usability.

Several studies have been conducted in relation to spatial data on real estate for assessment and taxation purposes (Kokkonen, 2006; Tomić, 2010). Barańska (2004) studied the elements of data quality sets and stochastic models of real estate market value predictions. Barvika et al. (2013) studied interlinks between real estate databases and real estate mass appraisal data for property tax purposes. Mangioni (2012) studied the impacts of informatization and accessibility of data on real estate, and the principles of a good property tax system. Several studies focused on the development of methods for evaluation or quality assessment of spatial data (Pipino et al., 2002; McKay, 2003; Cerovski, 2010; Xia, 2012). Numerous automated methods and tools have been developed in support of data quality assessment (Podobnikar, 2001; Li et al., 2012) or a selected quality element (Goodchild & Hunter, 1997; Ariza-López & Mozas-Calvache, 2012; Hast, 2014; Hashemi & Abbaspour, 2015). Maggio (2012) highlighted the significance of improving real estate data quality in Italy for municipal property tax assessment, and for a waste deposit tax that is assessed depending on the area of the property. Based on data submitted by owners of land and buildings, data from other official sets, and orthophotos, the quality of graphic and descriptive data of the cadastre of buildings and land was improved. Improving the completeness of real estate databases resulted in higher income from relevant taxes and in a higher number of illegal construction projects detected. Caeiro et al. (2016) highlight the effect of improving data quality in the real estate cadastre in Portugal on real estate assessment and property tax assessment. In the Lisbon area, the completeness, thematic accuracy, logical consistency, and positional accuracy of real estate data were improved through active involvement of real estate owners, gathering data on real estate ownership, and field geodetic measurements. Real estate data quality improvement significantly influenced the favourable regulation of ownership relations and usability of data for other purposes. Completeness of databases on land and buildings, which significantly influences the income from taxation, differs between European Union countries. According to data from the United Nations (2014), more than 80% of all land has been registered in European Union countries. The highest percentage has been recorded in central Europe and Scandinavia. In Armenia, the majority of non-recorded land is state-owned. In Malta, findings show that the percentage of recorded land is higher in urban areas. Around 2% of the land in Spain is not recorded, mostly in the countryside.

In the years after independence, Slovenia invested substantial funds into developing and setting up various spatial databases. As reported by Petrovič (2006), these were set up rather quickly, but frequently lacked sufficient and appropriate quality assurance. Many studies of spatial database quality have been conducted in Slovenia. The Geodetic Institute of Slovenia (2003) found that around one-fourth of data in the land cadastre were of poor or very poor quality, in particular in rural areas and in areas of less intensive use. Ferlan (2005), Čeh et al. (2011), Ferlan et al. (2011), and Bohak (2016) highlighted that the set of digital cadastral plans was inconsistent, and they pointed out differing positional accuracies. Frequent subjects of studies are the building cadastre (Geodetic Institute of Slovenia, 2015; Triglav Čekada et al., 2016) and the real estate register (Lisec et al., 2015; Mitrović, 2015; Požun, 2015; Starček, 2017). Smodiš (2011) pointed out that the quality of determining the mean market value of real estate depended on the quality of data on real estate in the real estate register. Mitrović (2015) pointed out the low quality of data submitted by persons subjected to property tax payment into the Real Estate Market Register.

Regarding spatial data, Kobetič (2014) found that data required for CLF assessment either did not exist, were not managed in an appropriate format, or were poorly maintained. Grilc (2017) and Ziherl (2017) found that updating the database of the Municipality of Kranj with data from the real estate register resulted, among other things, in an increase in the number of persons subject to CLF payment, and subsequently in increased income from the CLF. For effective improvement of data quality, Grilc (2017) also points out the significance of public display of data on real estate, and cooperation of real estate owners and spatial data experts. Gerčer (2017) particularly pointed out the discrepancies between data on construction land areas in the municipal CLF assessment database and the real estate register data. Mivšek and Radovan (2017) pointed out that differing data quality impacted irregularities in CLF assessment. Urankar (2016) assessed that, on account of incompleteness of municipal databases, income from the CLF was 20% to 30% lower. Slovenia's Financial Administration (Finančna uprava Republike Slovenije, 2014) reported that persons subject to CLF payment failed to promptly notify the communities of any changes impacting the CLF assessment. In this respect, Režek et al. (2015) highlighted that a multitude of providers of spatial databases and modern technology for acquiring spatial data may cause a lack of a critical approach to the use of spatial data. Thus, solutions, proposals, and measures based on such data may be of disputable quality. All of the above underlines the significance of providing quality spatial data.

3 Databases for property tax purposes in Slovenia

In case of the CLF, the subject of taxation is built-up and/or unbuilt construction land. Areas intended for residential or business purposes may be classified as built-up construction land. The tax base is the area of unbuilt construction land and the residential or business area of a building. Municipalities tend to define the areas of land, residences, and buildings for business purposes in different ways. Based on the ordinance on the CLF, municipalities define the criteria and the number of points depending on the characteristics of construction land and its advantages or disadvantages. The Construction Land Act (Sln. *Zakon o stavbnih zemljiščih*, Ur. l. SRS, no. 18/1984 and Ur. l. RS, nos. 44/1997, 67/2002, and 110/2002) did not define all the criteria for setting the CLF, on account of which the municipalities may frequently arbitrarily define the criteria and the number of points. To this end, municipalities have in place their own CLF assessment databases, which in most cases, as reported by Kobetič (2014), do not link to the reference databases (land cadastre, building cadastre, and real estate register). This, as pointed out by Grote et al. (2015), significantly impacts the illogical nature and non-transparency of the property tax system in Slovenia. The Construction Act (Sln. *Zakon o graditvi objektov*, Ur. l. RS, no. 102/2004, with changes) finally required the use of official databases (land cadastre, cadastre of buildings, and the real estate register) in managing the CLF system, which is not observed by all the municipalities.

The data required for CLF system management differ between the municipalities and depend on provisions of the ordinances or the criteria. Among the criteria, municipalities take into account in particular the location, utility connections, functional advantages of construction land location, intended use according to spatial implementing acts, density of public functions and business activities, and constant excessive impediments in construction land use. Certain municipalities also take into account the configuration of the terrain, occupation of buildings and land, number of private parking spaces, accessibility by public transport, impediments in the use of construction land, density of public functions, abandonment and wear and tear of a facility, and other factors. The building cadastre, land cadastre, and real estate register do not include all the data required by municipalities for defining the number of points and the CLF. In addition to data from the reference spatial databases, the municipalities also acquire data from the graphic section of the land cadastre, from digital bases of valid spatial elements in the long-term and medium-term social plan, and from other sources.

Data on real estate in Slovenia are maintained in several reference databases that are used in the property tax process; specifically, in the land cadastre, building cadastre, land register, consolidated cadastre of economic public infrastructure, real estate register, real estate assessment set, real estate market records, register of spatial units, and set of topographic and cartographic data. Cadastres contain data on rights and legal relations that are recorded by the land register office. The cadastre constitutes the original records for data on real estate as the subject of rights. The real estate register constitutes the public records on all real estate that is recorded as real estate. It is defined as an open system that allows various users, based on their respective regulations and purposes, to expand its multiple purposes by defining additional data on real estate (Geodetska uprava Republike Slovenije, 2013). As a database, the real estate register is in itself incomplete on account of the incompleteness of the records that data are taken from, and it has limited quality, which is mostly due to the inappropriately implemented inventory of real estate and the prescribed method for modifying data. Nevertheless, in our opinion, it is a higher-quality database than the CLF assess-

ment database. This may also be inferred from the systemic CLF improvement recommendations (Ministrstvo za okolje in prostor et al., 2016).

4 Empirical study of the quality of the municipal CLF assessment database

4.1 Methodology

This study compared the datasets on residential and business buildings, and on unbuilt construction land, managed by the municipalities as part of their CLF assessment databases, with the datasets of the real estate register as the reference database. First, we analysed the ordinances on CLF assessment in the selected municipalities. We acquired data from nine municipalities that joined the project for updating the CLF assessment database and from which we could obtain appropriate data for carrying out the analysis. We analysed the types and sources of data used by municipalities in their CLF assessment. In analysing the quality of datasets managed by municipalities for CLF assessment, we focused on three essential quality elements as defined by SIST EN ISO 19157:2015: the completeness, thematic accuracy, and logical consistency of municipal databases.

Then, for all the municipalities involved, we calculated the matching of data on the number of parts of buildings and the matching of data on the area of buildings in the municipal CLF assessment databases with the data from the real estate register. Several methods for determining similarities between multitudes are known (Romesburg, 2004; Albatineh & Niewiadomska-Bugaj, 2011; Liu et al., 2014; Aamir & Bhusry, 2015). To calculate the matching of data on the number of parts of buildings between the databases, this study used the Jaccard index, which is frequently used to establish similarities between multitudes (Lee, 2017; Nowak Da Costa, 2015). The Jaccard index J, used to calculate the similarity between two datasets, A and B, is computed as follows (Jaccard, 1901):

$$J(A,B) = \frac{|A \cap B|}{|A \cup B|} \in [0,1]. \quad (1)$$

In studying similarities between two datasets, the Czekanowski index C (Wierzchoń and Kłopotek, 2018) is frequently applied as well, which is computed as follows between two datasets of A and B (Czekanowski, 1913):

$$C(A,B) = \frac{2|A \cap B|}{|A| + |B|} \in [0,1]. \quad (2)$$

The two indices accurately measure the matching of data in two datasets. However, such accuracy is not required in this study and it is not reasonable either. For this reason, we determined the matching of data on the area of buildings in the municipal CLF assessment databases and in the real estate register data by defining as matching data such data for which the area values differed by up to 5%, which is not counted as a match by the basic indices. Thus, we had to apply the adjusted Jaccard index of matching J_p and the adjusted Czekanowski index of matching C_p, which were defined and computed for the study purposes using the equation:

$$J_p = \frac{\sum_{i=1}^{n} A_{CLF\_u(i)}}{\sum_{i=1}^{n} A_{CLF(i)} + \sum_{i=1}^{n} A_{RER(i)} - \sum_{i=1}^{n} A_{CLF\_u(i)}} \quad (3)$$

$$C_p = \frac{2 \cdot \sum_{i=1}^{n} A_{CLF\_u(i)}}{\sum_{i=1}^{n} A_{CLF(i)} + \sum_{i=1}^{n} A_{RER(i)}} \quad (4)$$

where

$$A_{CLF\_u(i)} = \begin{cases} A_{CLF(i)}, & \text{if } |A_{CLF(i)} - A_{RER(i)}| \le 0{,}05 \cdot A_{RER(i)}, \\ 0, & \text{otherwise} \end{cases} \quad (5)$$

where $A_{CLF(i)}$ is the area of building i in the municipal CLF assessment database, and $A_{RER(i)}$ is the area of building in the real estate register. The determination of matching of data on building areas and on the number of parts of buildings between the municipal CLF assessment database and the real estate register is significant for evaluating the quality of the municipal CLF assessment database compared to the reference database. Analysis results of data matching constitute the basis for possible data quality improvement measures and for updating the property tax system.

The study also updated the municipal CLF assessment data with data from the real estate register and with data from the collective cadastre of economic public infrastructure. Municipal CLF assessment data were updated for data on areas and actual use, and utility connections. Following the updating, the values of the datasets compared in the relevant databases were equal.

Table 1: Basic data on municipalities in question.

Municipality	Municipality area (km²)	Population (first half of 2017)	Houses (2017)	CLF as % of all property tax revenues in 2017
Črnomelj	339.7	14,365	4,876	92.3
Divača	145.1	4,000	1,423	98.6
Dornava	28.4	2,226	974	99.6
Duplek	40.0	6,803	2,265	93.5
Mokronog–Trebelno	73.4	3,045	1,519	94.9
Sodražica	49.5	2,184	867	90.8
Središče ob Dravi	32.7	2,019	757	96.2
Vuzenica	50.1	2,670	770	98.6
Zreče	67.0	6,409	1,897	93.9

Source: Statistični urad Republike Slovenije (2017); Ministrstvo za finance (2018).

The municipal CLF assessment databases were modified through updating. Prior to updating, they contained records of an individual part of the building or ownership, and, after updating, they contain data on the building or unbuilt construction land as a whole. Thus, the number of records in the municipal CLF assessment database was decreased. There is no uniform approach for defining the tax base in determining the amount of CLF payable; that is, the area of buildings. In the ordinances on CLF assessment, municipalities define the area of residential or business buildings in different ways; for example, based on the foundation of a building, actual area, floor area, net floor area, usable area, and so on. In updating the municipal CLF assessment databases, the data from the real estate register were used for the net floor area of a part of a building. The net floor area is the area of all the rooms of a part of a building, irrespective of their actual possible use. The net floor area of a part of a building that has several floors is the sum of the areas of the rooms of this part of the building on all the floors (Geodetska uprava Republike Slovenije, 2010).

4.2 Municipalities selected and data used

The study comprised nine municipalities that joined the project of updating the CLF assessment databases: Dornava, Duplek, Sodražica, Črnomelj, Divača, Vuzenica, Središče ob Dravi, Mokronog–Trebelno, and Zreče. Table 1 presents the basic data for the municipalities.Table 1 shows that the income from the CLF in these municipalities constitutes an extremely high percentage of all property tax revenues (more than 90% in all the municipalities). The municipalities analysed levied a higher CLF on average from natural persons than the Slovenian average, and on average a lower CLF per m² than the national average for legal entities (except in the Municipality of Duplek).

The following data were applied in the study:

- Demographic data of municipalities for 2015 and 2016 (source: Statistical Office of the Republic of Slovenia);
- Data on CLF and tax revenues of municipalities for 2015, 2016, and 2017 (source: Ministry of Finance; Financial Administration of the Republic of Slovenia);
- Data from the real estate register, data on municipal boundaries and areas, and data from the collective cadastre of economic public infrastructure (source: Surveying and Mapping Authority of the Republic of Slovenia);
- Data and ordinances on CLF (source: municipal ordinances and databases).

4.3 Characteristics of the CLF system in the municipalities studied

All the municipalities studied, excluding the Municipality of Središče ob Dravi, had a CLF ordinance in place at the time the study was carried out. The Municipality of Središče ob Dravi applied the ordinance of the neighbouring Municipality of Ormož. Municipalities adopted ordinances at different times and had no uniform CLF assessment arrangement. This means that the CLF amounts for comparable pieces of land and buildings in relevant municipalities differed significantly. All the municipalities in question have a stipulation in their ordinances that the CLF is levied based on the built and unbuilt construction land. Among the municipalities studied, only the municipalities of Črnomelj, Divača, Vuzenica, and Zreče in fact also levied the CLF for unbuilt construction land. Table 2 shows the basic elements of ordinances on the CLF in relevant municipalities.

As shown in Table 2, municipalities mostly take into account the minimum scope of criteria defined in the Construction

Table 2: Number of zones and criteria of municipal ordinances for specifying the amount of CLF.

Zones and criteria	Municipality								
	Črnomelj	Divača	Dornava	Duplek	Mokronog–Trebelno	Sodražica	Središče ob Dravi	Vuzenica	Zreče
Number of zones	4	2	2	3	3	4	4	2	3
Location	•	•	•	•	•	•	•	•	•
Utility connections		•	•	•	•	•	•	•	•
Zoning	•	•	•	•	•		•		•
Exceptional advantage of location		•		•	•		•	•	•
Non-occupation of buildings and/or pieces of land	•	•			•		•		
Non-zoned use	•				•		•		
Impediments to use				•	•			•	
Expediency of exploitation					•				
Possibility of more intensive use of utility connections and other facilities					•				
Abandonment of buildings and/or pieces of land							•		
Wear and tear of buildings							•		

Source: Municipal ordinances on CLF, own analysis.

Table 3: Sources of data for determining the area of built construction land for residential and business purposes.

Municipality	Source of data
Črnomelj	Real estate register, cadastre of buildings, and land cadastre
Dornava, Duplek, Mokronog–Trebelno, Sodražica	Municipal database
Divača, Središče ob Dravi	Data from official records, and data submitted to municipal administrations by persons subject to CLF payment
Vuzenica, Zreče	Data from the direct construction land user, database on building permits granted, and other official records

Source: Municipal ordinances on CLF.

Table 4: Number of records in municipal databases prior to and after updating, number of buildings, and unbuilt pieces of construction land, compared to the status in the real estate register.

Municipality	Number of all records in municipal database:		Number of buildings and unbuilt pieces of construction land (% of all, after updating), which are:	
	Prior to updating	After updating	Not present in municipal database and present in real estate register	Present in municipal database and not present in real estate register
Črnomelj	13,179	6,300	67 (1.1%)	4 (0.1%)
Divača	3,021	1,788	3 (0.2%)	18 (1%)
Dornava	2,006	1,221	23 (1.9%)	10 (0.8%)
Duplek	4,542	2,766	55 (2%)	9 (0.3%)
Mokronog–Trebelno	3,862	1,991	6 (0.3%)	3 (0.2%)
Sodražica	1,871	1,010	7 (0.7%)	2 (0.2%)
Središče ob Dravi	1,669	1,019	23 (2.3%)	92 (9%)
Vuzenica	1,694	1,010	11 (1.1%)	9 (0.9%)
Zreče	3,815	2,301	14 (0.6%)	24 (1%)

Source: Municipal CLF databases, real estate register, own analysis.

Land Act; that is, utility connections, location, and zoning, as well as exceptional advantages linked to generating revenue through business. Municipalities also arbitrarily take into account other criteria, which tend to differ between the municipalities. In determining the area of construction land, municipalities tend to use different sources of data (Table 3), mostly based on data submitted to the municipal administration by those subject to CLF payment.

The results of the analysis of the quality of municipal databases by selected quality elements are presented below.

4.4 Completeness of municipal databases

Completeness according to SIST EN ISO 19157:2015 is the adequacy of the user data model and the presence or absence of structures, attributes, and relations, and it may have two sub-elements: omission of value or excess value. Completeness may refer to the completeness of a data model (model completeness), completeness of attributes of the structure type (attribute completeness), or the absence or excess of data values in attributes of present structures (data completeness; Šumrada, 2015). The study analysed the completeness of municipal CLF assessment databases, which is defined by the ratio between the number of buildings and the unbuilt construction land in the database, and the real estate register. Thus, it determined the deficient and/or excess data values in a database or dataset.

In all the municipalities, different levels of database completeness were established. The data in Table 4 show that, in relevant municipal CLF assessment databases, on average 1.1% of records on buildings and unbuilt construction land were absent, as compared to the data in the real estate register. In the relevant municipalities, on average, 1.5% of records on buildings and unbuilt construction land are present in the municipal CLF assessment databases that are absent from the real estate register. In the municipal databases up to several records were kept for an individual building or unbuilt construction land, depending on the number of parts of a building, or on the number of ownership shares on the real estate. Analysis of the completeness of attribute data ascribed to a particular building or to unbuilt construction land in the municipal CLF assessment databases showed the frequent absence of data on the number of points per particular criteria of the ordinance. In numerous cases, only a total number of points was ascribed.

4.5 Thematic accuracy of municipal CLF assessment databases

Thematic accuracy shows the reliability of classification of values, which are ascribed to the basic elements of data as attributes, and according to the provisions of SIST EN ISO 19157:2015 may consist of three sub-elements: accuracy of classification of data, quantitative accuracy of values of descriptive attributes, and quantitative accuracy. The study focused on comparing the accuracy of data on the area of buildings and unbuilt construction land in the municipal CLF assessment databases compared to the relevant data contained in the real estate register. When the municipal databases were set up in the 1990s, the concept of usable/effective area was applied (including correction factors for the various premises) in most cases, and thus the net floor area used in the real estate register is mostly greater than the usable/effective area.

Table 5 shows that the data on the number of parts of buildings between the municipal CLF assessment databases and the real estate register match relatively well (mean value of the Jaccard index $J_p = 0.87$). There exist minor differences between the municipalities studied. Somewhat different results were obtained in the analysis of the area of buildings and unbuilt construction land. Taking into account the hypothesized limit for the adjusted Jaccard index and the adjusted Czekanowski index, 0.33 (values below this limit denote a higher deviation of data), the highest deviation of data on the area of buildings and unbuilt construction land between the municipal database and the real estate register was established in the Municipality of Mokronog – Trebelno ($J_p = 0.15$ and $C_p = 0.27$) and in the Municipality of Dornava ($J_p = 0.31$ and $C_p = 0.47$). In other municipalities, J_p ranges between 0.41 and 0.73, and C_p between 0.58 and 0.85. Corresponding to this is the result for the mean deviation and differences in areas by more than 50%. The mean deviation of areas of buildings and areas of unbuilt construction land between the municipal CLF assessment database and the real estate register amounts to 18 m^2 in the Municipality of Sodražica, and up to 511 m^2 in the Municipality of Mokronog–Trebelno. The percentage of buildings and unbuilt construction land in the municipal CLF assessment database for which the area deviates by more than 50% from the area in the real estate register ranges between 1.01% in the Municipality of Duplek and 9.83% in the Municipality of Dornava.

4.6 Logical consistency of data in municipal databases

Logical consistency refers to the conceptual (semantics), format (record), domain (scope of values), and topological discrepancy in databases. Logical consistency shows the consistency of conceptual rules of a data model and the structure of data in a dataset (composition of classes and attributes, and relations between them; Šumrada, 2015). In analysing the logical consistency of data in municipal CLF assessment databases, it was found that the municipal databases contained several

Table 5: Matching of data on the number of parts of buildings and areas of buildings, and the area of unbuilt building land, between the municipal CLF assessment data collection and the real estate register.

	Number of parts of building	Area of buildings and unbuilt construction land			
Municipality	Jaccard index J	Adjusted Jaccard index J_p	Adjusted Czekanowski index C_p	Mean deviation [(a)] (m^2)	Difference in area more than 50% [(b)] (%)
Črnomelj	0.86	0.51	0.68	91	2.46
Divača	0.83	0.50	0.66	117	5.31
Dornava	0.80	0.31	0.47	59	9.83
Duplek	0.93	0.73	0.85	18	1.01
Mokronog–Trebelno	0.84	0.15	0.27	511	8.49
Sodražica	0.92	0.65	0.79	28	2.57
Središče ob Dravi	0.83	0.55	0.71	36	4.91
Vuzenica	0.92	0.41	0.58	138	1.88
Zreče	0.94	0.54	0.71	140	1.35

Source: own computation.
Note: [(a)] Mean deviation of areas of buildings and unbuilt construction land between the municipal database and the real estate register. [(b)] Percentage of buildings and unbuilt construction land in the municipal CLF assessment database for which the area deviates by more than 50% from the area in the real estate register.

Table 6: Data on CLF assessment prior to and after updating municipal CLF assessment databases.

	Data on CLF prior to updating					Data on CLF after updating					
	Legal entities		Natural persons			Legal entities		Natural persons			
Municipality	No. of decisions	Amt. (EUR)	No. of decisions	Amt. (EUR)	Amt. total (EUR)	No. of decisions	Amt. (EUR)	No. of decisions	Amt. (EUR)	Amt. total (EUR)	Assessment index before/after
Črnomelj	202	191,764	4,794	196,476	388,239	210	278,696	5,743	327,739	606,435	156
Divača	47	137,011	1,220	60,664	197,675	77	164,465	1,755	96,315	260,780	132
Dornava	12	5,668	801	57,475	63,143	17	19,732	1,073	86,290	106,022	168
Duplek	28	27,534	1,940	136,914	164,448	40	33,346	2,620	230,471	263,817	160
Mokronog–Trebelno	29	30,420	1,291	70,268	100,688	30	33,596	1,402	82,049	115,645	115
Sodražica	27	7,928	702	25,272	33,200	27	10,956	931	45,089	56,045	169
Središče ob Dravi	17	27,030	824	104,410	131,440	26	39,386	913	115,139	154,525	118
Vuzenica	24	131,546	579	25,924	157,470	34	126,595	1,143	50,532	177,128	112
Zreče	138	323,663	2,155	164,030	487,693	164	332,487	2,332	195,407	527,893	108

Source: Ministrstvo za finance (2017); own computation.

records for an individual building or unbuilt construction land. A number of cases on inconsistency of data were perceived for the use of a building or a part of building, and certain records on a building or unbuilt construction land were present in the real estate register but absent from the municipal database, and vice versa. Likewise, the data for house numbers were found to be absent in several cases. As already mentioned, the area of a part of building in the municipal CLF assessment database was unequal to the area of a part of building in the real estate register. Considering that in the ordinances on the CLF different criteria are taken into account by the municipalities, it is difficult to conduct a comparative analysis.

4.7 Effects of updating municipal CLF assessment databases

The central aim of this study was to determine whether updating municipal CLF assessment databases on built and unbuilt

construction land in the selected municipalities with data from the real estate register had a positive influence on the CLF amount payable, or whether, by improving data quality, the CLF amount payable in the relevant municipalities had increased. The results in Table 6 show that the use of data from the real estate register positively influenced the CLF amount payable in all the relevant municipalities.

The number of those subject to CLF payment, both legal and natural persons, increased on average by around 30% after updating the municipal databases in all the municipalities. In the municipalities studied, the CLF amount after updating municipal databases was 38% higher on average in relation to the CLF amount prior to updating. In the Municipality of Duplek, the CLF amount after updating the data increased by 60%, in the Municipality of Dornava by 68%, and in the Municipality of Sodražica by a full 69%. The greater the average deviation of the area of a building and unbuilt construction land between the municipal CLF assessment database and the real estate register, the less the increase in CLF amount after updating the data. In all the municipalities, after updating there was a relatively high increase in the CLF amount in relation to all the municipal tax revenues (mean percentage of increase t_{rev} = 51.3%).

5 Conclusion

This study analysed the quality of databases in selected municipalities that are used for CLF system management. The analysis results show that the municipalities studied keep their own databases for the CLF system management purposes. Databases were mostly set up in the 1990s based on the real estate inventory or data submitted by those subject to CLF payment. Municipal CLF assessment databases are primarily maintained at the request of those subject to CLF payment, in the case of ownership changes, or based on requirements by the taxation authority or courts of justice. Prior to updating, the municipalities were mostly keeping their databases in the form of tables, without the support of GIS technology and cartographic presentations of the spatial situation of real estate. Among the relevant municipalities, only the ordinance on the CLF for the Municipality of Črnomelj had an indication that, for determining the area of built construction land and factual use, data from the real estate register, the building cadastre, and the land cadastre were used. The study also showed that, due to the absence of a uniform identifier of buildings and parts of buildings, it would be difficult to interconnect the municipal CLF assessment databases with the real estate register.

In relation to the municipalities, the study found that the quality of the municipal CLF assessment database differed in terms of all the quality elements involved: completeness, logical consistency, and thematic accuracy. The study findings show that the municipal CLF assessment databases comprised most buildings, parts of buildings, and unbuilt construction land that are present in the real estate register and are the subject of CLF assessment, whereby Hypothesis 1 was negated. Cases of additional buildings, parts of buildings, and construction land (that are present in the municipal CLF assessment database and absent from the real estate register) were relatively few, except in the Municipality of Središče ob Dravi (9% of all the records). We established the frequent absence of attribute data, in particular the number of points per particular criteria of the ordinance on the CLF. Using the Jaccard index J we found a relatively high level of matching of the number of parts of buildings in the municipal databases and in the real estate register. We confirmed the usability of the adjusted Jaccard index J_p and of the adjusted Czekanowski index C_p. Matching of data, taking into account at least 5% of value deviation, is an acceptable measure, considering that data on the area of real estate are obtained by different methods at different times. This is also acceptable from the point of view of efficiency because the updating procedures are not implemented if deviations are less than 5%. Using J_p and C_p, we confirmed a relatively low level of matching of data on areas of buildings and unbuilt construction land between the municipal CLF assessment databases and the real estate register. Hypothesis 2 was thereby confirmed. More distinctive is also the logical inconsistency of data between the municipal CLF assessment databases and the real estate register. We confirmed Hypothesis 3; namely, that updating datasets in the municipal databases with data from the real estate register significantly influences an increase in the number of those subject to CLF payment and the CLF amount payable (on average by 38% in the municipalities studied and by more than 60% in some of them). The usability of the methodology presented was also confirmed by comparing the results. Considering the type and scope of inconsistencies between the municipal CLF assessment databases and the real estate register, and considering the percentage of increase in the CLF amount after improving the data quality, the results of the study using the method presented are rather similar to the findings by Gerčer (2017), Grilc (2017), and Ziherl (2017).

Inadequate quality of spatial data that are used by municipalities for CLF assessment purposes may have far-reaching consequences. Its direct impact may be in an increase in complaints against decisions regarding CLF assessment. This increases the probability of infringements against the principles of the modern taxation system and against constitutional principles, in particular against legality and equality before the law. Databases used by the municipalities for CLF assessment purposes are subject to constant changes. These changes require appropriate management approaches based on modern GIS technology. In

addition to the reference databases, several other data sources are also available (e.g., Google Maps, Open Street Map, and other volunteer spatial databases), which may be used for comparing the quality of selected datasets in the municipal CLF assessment bases. The method presented is especially applicable in cases in which a uniform real estate identifier has been set up for the databases compared.

It would be reasonable to conduct such a study in all Slovenian municipalities, where updating the CLF assessment databases would contribute to improving the quality of data on buildings and unbuilt construction land. A well-regulated and high-quality CLF assessment database would facilitate a more equitable, more efficient, and more reasonable property tax. This has a subsequent effect on the level of social acceptability of property tax and the stability of tax revenues, and it decreases the level of avoidance of CLF payment. A high-quality CLF assessment database would find application in other areas as well; for instance, in spatial management, spatial planning, real estate management, and so on. The challenge in carrying out such a study in all the municipalities is connected to a non-uniform data model and the demanding process of data acquisition and data collation.

Slovenia is aware of the significance of attaining an equilibrium between increased revenue and economic growth through improving taxation quality. In the process, Slovenia intends to improve the structure of individual types of taxes; among other things, with an expansion of tax bases to improve compliance with tax obligations and to strengthen the tax administration. As part of this, Slovenia plans further reforms in property tax because, as several authors (Johansson et al., 2008; Heady et al., 2009; Arnold et al., 2011) have reported, property taxes constitute the least impediment to economic growth. Considering the active economic and legislative changes at the local and national levels, the study results may provide support in decision-making processes in the relevant area. The study findings may also be used as basis in preparing modifications of the property tax system in Slovenia. In preparing a new taxation system, specific attention should be dedicated to the quality and interoperability of official real estate databases. Regular independent data quality audits performed in line with standardized methods are therefore recommended, alongside awareness-raising programmes for real estate owners on the status of data and significance of quality data on their own real estate. Of benefit in increasing the quality of official databases may be insight into real estate data and submission of requests for replacing obsolete data with accurate data via a web-based service, and user-adjusted / user-friendly cartographic data presentations.

Simon Starček, Ig, Slovenia
E-mail: simon.starcek@gmail.com

Maruška Šubic Kovač, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Ljubljana, Slovenia
E-mail: maruska.subic-kovac@fgg.uni-lj.si

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Vedrana IKALOVIĆ
Leonardo CHIESI

A dynamic sense of home: Spatio-temporal aspects of mobility of young Tokyo residents

In highly industrialized and institutionalized societies aiming for maximum efficiency, individual activities must be synchronized with the daily rhythms of a city. As a spatial and institutional realm, the city imposes on people and influences their level of attachment, consequently altering their sense of home. This is most obvious in contemporary cities, where daily life involves movement, and where rest is often sought outside the living place, while on the move. By examining the spatial and temporal aspects of mobility of young Tokyo residents, this article explores how their sense of home and levels of attachment to the physical environment are affected by the city. It reveals a dynamic sense of home in which routes are more significant than roots and in which attachment is not restricted to a single location. Instead, it is understood as attachment to temporal and spatial relationships produced by the activities of people and institutions.

Keywords: sense of home, place attachment, movement, contemporary city

1 Introduction

"Once we give up the belief that our life-world is rooted in the ground, we may thus come to a point where ungroundedness is no longer experienced as existential anxiety and despair but as freedom and lightness that finally allows us to move." (Rajchman, 1998: 88)

The everyday world has its own standard time based on the seasons, the calendar, and people's inner time, which is intersubjectively available (Berger & Luckmann, 1991). In urbanized areas, where more than half the world's population lives, it is necessary to synchronize and coordinate activities in time and space with the daily rhythms produced by the city. Lifestyles and changes to them in modern societies that were caused by industrialization, which significantly altered traditional ways of living, are explored in this study through the concepts of place attachment and sense of home. The city is explored as a spatial and institutional realm from the perspective of an individual. As a spatial realm, with the distribution of places that provide and embody homelike activities, the city provides spaces where individuals live, work, and socialize (Maki, 1979; Ashihara, 1983; Caballero & Tsukamoto, 2006; Maki & Mulligan, 2008). It connects these significant places through means of transportation, creating a network or a field of daily activities (Ikalovic & Chiesi, 2018). As an institutional realm and as a socially constructed objectivity, it imposes and enforces various spatial and temporal systems, within which individuals need to adapt and adjust their inner time (Berger & Luckmann, 1991).

Since the second major industrial shift from heavy industries to services, the centre of economic, industrial, and institutional power in Japan has been the capital city, Tokyo. It is a metropolis with the world's largest population,[1] accommodating the highest number of corporations and employees in the world (Fujita & Tabuchi, 1997). Within this spatial and temporal system, external and internal relocations[2] are common practice, and they have been described as one of the most interesting features of the Japanese employment system. As a consequence of relocations, various social and psychological implications are discussed, such as the weakening of family bonds (Geis & Ross, 1998) and the impact of new environments on wellbeing (Brett, 1982). How does a city like Tokyo, as a spatial and institutional realm, alter residents' sense of home and level of attachment to the physical environment? This study revisits the concepts of attachment and home through their physical, social, temporal, and psychological aspects following Werner et al. (1985) and Scannel and Gifford (2010), with an emphasis on the temporal dimension.

The exploration of temporality and urban daily rhythm leads to the definition of the dynamic sense of home, in which routes are more significant than roots (Hall, 1995; Massey & Jess, 1995; Clifford, 1997; Gustafson, 2001). The attachments that arise in urban environments are those to a place that are produced by the activities of people and institutions and to the city's spatial and temporal systems.

2 Theoretical background

2.1 Home and place attachment

Since the Industrial Revolution and the separation of living places from places of work, place attachment and home have departed from the traditional, static concept. For the exploration of both concepts and their relationships, two decades are significant. The first is the 1970s, when humanistic geographers focused on individuals as knowing and feeling subjects rather than objects or simply rational beings (Relph, 1976; Tuan, 1977). The second is the 1990s, when tourism (especially mass tourism) resulted in increased mobility, threatening rootedness as its negative counterpart (Urry, 2002; Augé, 2008).

In the 1970s, the relationship between people and the world through experience transformed an abstract realm of space into an experienced and felt place, and attachment to places has been explored and defined through terms such as *topophilia*, *insideness*, and *authenticity* (Relph, 1976; Tuan, 1977; Werner et al., 1985; Smaldone, 2007). These terms became a common ground for the exploration of spaces and places on different scales and within different borders (either in real, physical entities or within conceptual, abstract, theoretical borders). It became possible to explore attachment to houses, neighbourhoods, cities, countries, and their social complements: family, friends, neighbours, or social groups such as co-workers, and nationality (Marston, 2000; Hidalgo & Hernandez, 2001; Beatley, 2005; Ng et al., 2005; Blunt, 2007; Lewicka, 2010). As different social and spatial forms emerged and evolved, frameworks became more complex and the boundaries of research dealing with these phenomena started to intertwine. Methodologically, there have been attempts to define a comprehensive multiscalar and multidimensional framework involving various aspects of the same concept. Tripartite frameworks including spatial, social, and psychological/temporal aspects of the phenomena were developed as a result (Werner et al., 1985; Mallett, 2004; Scannell & Gifford, 2010). Attachment and home have become dynamic concepts.

This was manifested through the exploration of movement and places that accommodate movement, dislocation, and travel: non-places that are in many ways identical and lacking con-

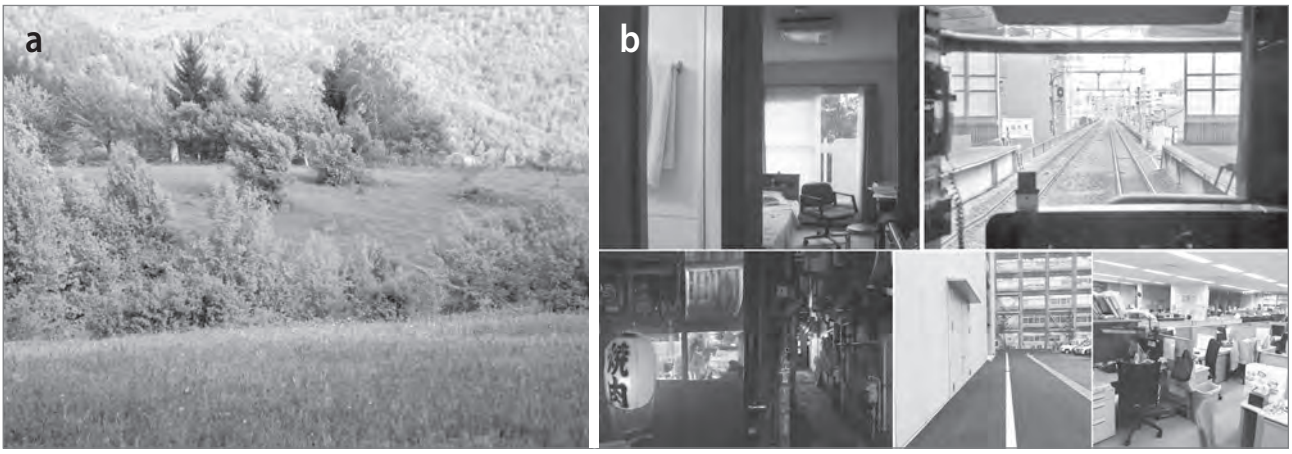

Figure 1: Static and dynamic concepts of home; a) home as a geographic reference point; b) dynamic home as a network of four significant places connected by means of transportation (photo: Vedrana Ikalović).

textual qualities (Zukin, 1998, 2009; Augé, 2008). Travelling and commuting with the increased use of extensions (portable devices such as mobile phones and computers) and networking became a norm and added to the detachment from physical environments (Park et al., 2011).

However, today place attachment and mobility are not the opposites they used to be; rather, they should be explored as complementary or compatible concepts. Movement is already an integrated part of life, whether one explores it from the perspective of daily actions or from the life-course perspective. Movement is a norm, an inevitability, often not even questioned but taken for granted. The mobilities paradigm emphasises that all places are tied into networks of connections that extend beyond each place, and this goes beyond the imagery of terrains as spatially fixed geographical containers for social processes (Sheller & Urry, 2006). In network societies, spatial practices and their constant reiteration are defining and creating places, and the meaning of places arises from habitual mobilities and time-space routines, which are simultaneously individual and social (Pred, 1984; Blunt, 2007; Cresswell, 2013; Seamon, 2015). However, certain practices and their reiteration depend on what the environment allows (Berger & Luckmann, 1991; Gibson, 2014). On a daily basis in contemporary cities, this manifests itself in two ways: 1) through daily practices and habitual mobilities that rely and depend on a city's infrastructure (and are accelerated by it), and 2) in practices and routines that take place in public, semi-public, and commercial spaces that are provided, planned, designed, made, and maintained by the city through its industrialized sectors.

In an individual's lifetime, in industrial societies (and specifically in Tokyo) there is strong dependence on the presence of corporate cultures, in which corporations, regardless of the consent or dissent of their employees, have a tradition of inter-company relocations.[3] Relocations have become a routine, they impose spatial and temporal fragmentation, and they create temporary relationships between individuals and their temporary environments.

2.2 Place and city

When changing places of residence and moving home from one place to another, people are forced to (re)learn the patterns of daily life in their new environment (and, in the case of contemporary cities, within the network of places). As Seamon (2015) points out, a change in patterns may cause emotional stress because new behaviours must be repeated many times until they are learned. The point when the body familiarizes itself with new environment and reaches a state of rest is "becoming-at home" and a time of inactivity whose essential experiential structure is "at-homeness" (Seamon, 2015: 70), or the usually unnoticed, taken-for-granted situation of being comfortable in and familiar with the everyday world (Dovey, 1985).

Pred (1984) develops and defines a place as a process that produces and is produced by the activities of people and institutions. He argues that social divisions allow some mobilities and force constraints on others (Pred, 1984, cited in Cresswell, 2013). Pred's places are highly institutional and appropriate individuals' time. It is therefore possible to discuss the characteristics of appropriated time within each society and culture, on the city scale, and in different types of cities (Hall & Barrett, 2012). As an example, Savage et al. (1993) define the following types: third-world cities, cities in communist countries, global cities, older industrial cities, and new industrial cities. In network societies and information societies, which depend on and arise from mobility and connectedness, the contemporary city (especially the metropolis) is produced by the activities of people, who familiarize themselves with the daily urban dynamics, and the activities of institutions. From

Figure 2: Homelike activities "out of home"; a) actions usually associated with the concept of home; b) home extrapolated onto urban space (photo: Vedrana Ikalović).

the residents' point of view, dwelling involves movement and fragmented life, and daily life is spread throughout the entire network. The metropolis has become a connectedness, a spatial and temporal system with a specific rhythm that imposes upon a person (Altman, 1975; Somerville, 1997).

2.3 City and home

Through industrialized sectors, development of technology, and a massive influx of people into urban areas, physical, social, and temporal aspects became important for the concept of home. In a spatial sense the city had to provide varieties of accommodation, and in an institutional sense it accelerated the flow of information, goods, services, capital, and people (Fujita et al., 2004). On the architectural scale, during and after the Industrial Revolution (or the Meiji Revolution or Meiji Restoration) in Tokyo, traditional forms of living gradually transformed into medium-sized houses, rental houses, multi-family dwellings, and so on for what was to become the salaried middle class, which resided in various accommodations developed by corporations, agencies, and / or associations.[4] Moreover, because of time management, the synchronisation and coordination of activities in time and space, and distances, homelike activities were displaced and transposed from the private (living place) to the public realm (place of work) and socializing places (Oldenburg, 1989; Caballero & Tsukamoto, 2006) such as trains, convenience stores, noodle shops, public baths, coin laundries, love hotels, and so on. Therefore, talking about home in a spatial sense was not necessarily talking about the place of residence, which was used as storage or a bedroom (Ashihara, 1989; Yūko & Yokokawa, 1995).

Nomadic life, between here and there, is not restricted to a single locality and dwelling is now accomplished by travelling. One does not move to a dwelling, but "dwells by moving" (Deleuze & Guattari, 1988; Casey, 2013). In the contemporary city, attributes usually embodied in the home are dispersed into at least four places (living place, place of work, socializing

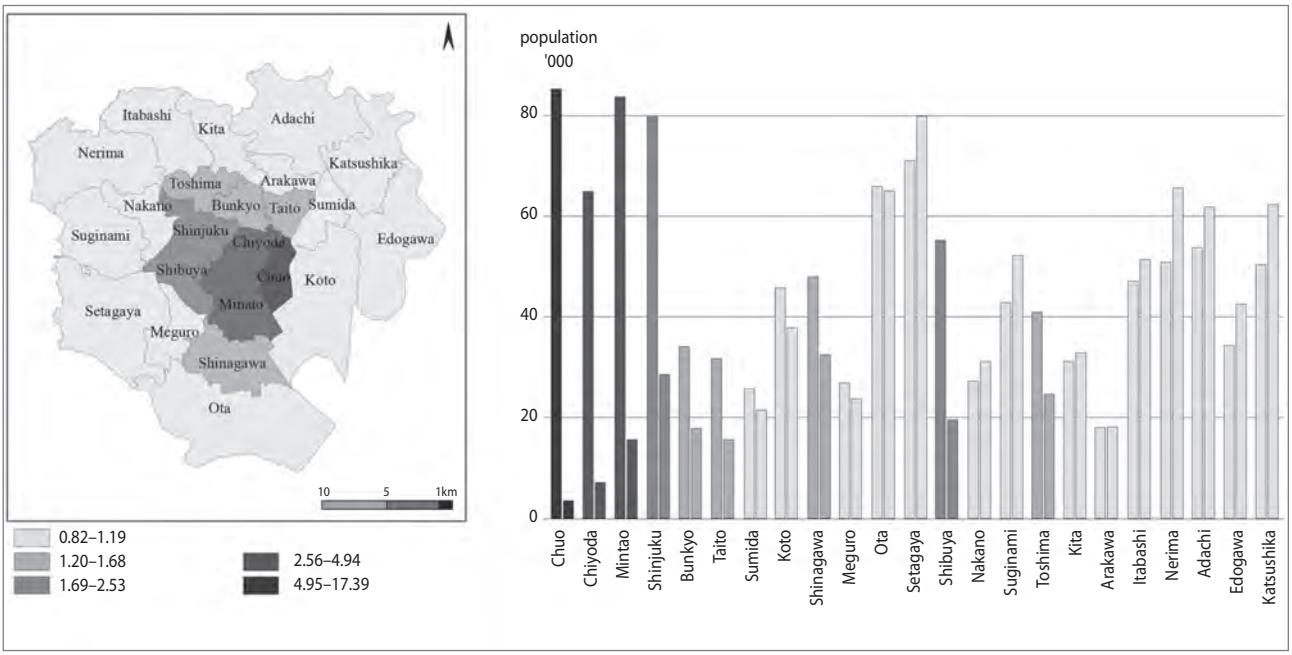

Figure 3: Daytime and night-time population ratio in twenty-three central Tokyo wards (illustration: Vedrana Ikalović).

place, and place of rest) connected by means of transportation, which also accommodate homelike activities (Ikalovic & Chiesi, 2018). Through this network, industrialized sectors make impositions on individuals' daily rhythm. Time spent "in traffic", "on the way", "on the move", and "in-between" significant places equals time spent in the intimacy of home (Figure 2).

2.4 Case study: Tokyo

Even today, in the post-industrial era in Japan, a frequent reason for changing residence is a job relocation. The possibility of relocating employees between companies has been described as one of the most interesting features of the Japanese employment system[5] (Dirks, 1999; Meyer-Ohle, 2009). Relocations consist of moving employees around to perform different work, and the practice of relocations at Japanese companies includes, among other characteristics, temporary and permanent external relocations, often generating friction between the employee's family life and work (Maeura, 2016). Relocations often do not require the consent of the employee, with a higher level of flexibility within large companies. Inter-company relocations have been studied and assessed at different levels. Some studies review relocations at the individual level (motivational factors), organizational development (cost-efficient transactions), and structural changes (at a micro-economic level; Dirks, 1999), but, even despite being studied from the employees' perspective in some cases, these studies do not deal with the sense of attachment and sense of home. Moreover, whether exploring personality and demographic factors, micro- or macroeconomic factors, or institutional conditions (Frey & Stutzer, 2000), they are commonly quantitative studies. This study therefore takes a different approach: spatial and temporal systems are explored from the personal perspective, through the cases of young Tokyo residents. Young Tokyo residents are individuals that currently live and work in the Tokyo Metropolitan Area. During their life, they have moved from multiple cities, which have different spatial and temporal characteristics and different urban daily rhythms. The attachment to previously lived places is explored, compared, and analysed from the perspective of the life-course and with an emphasis on frequent relocations.

With the industrial shift from the Tokyo – Osaka bipolar regional system to the Tokyo monopolar regional system and with two shifts of manufacturing industries (the first shift from light to heavy industries and second shift from heavy to high-tech and service industries), Tokyo grew into a major international financial centre with a high concentration of large companies[6] (Fujita &Tabuchi, 1997). Development of communication networks caused greater dependence on information, it encouraged the concentration of business sectors in Tokyo (Okamoto, 1997), and commuting became an integrated part of life. The population of commuting workers and students, constituting a daytime influx mainly from the three neighbouring prefectures of Saitama, Chiba, and Kanagawa, raised the awareness of the daytime and night-time population in cities. The concept of the daytime population refers to the number of people present in an area during normal business hours, including workers. This is in contrast to the "resident" population, which refers to people that reside in a given area and are typically present during the evening and night-time

hours. As an illustration, the Chuo Ward has an index of 17.39, making its daytime population up to seventeen times the night-time population (Figure 3).

The complexity of the existing administrative borders is graphically presented in Figure 4, which illustrates 1) the Tokyo Metropolis with twenty-three central wards, commonly perceived as Tokyo; 2) the Tokyo Metropolitan Area, which includes twenty-three central wards, twenty-six cities, three towns, and one village, 3) borders defined by the Japan Statistics Bureau with night-time / daytime population changes (municipalities with 10% or more of the population commuting to central wards are included), and 4) the Greater Tokyo Area.

The Japanese government provides statistics only for legal jurisdictions (i.e., cities and prefectures). There is no official or formal definition of metropolitan areas, and a number of researchers have developed their own definitions[7] (Fujita et al., 2004). The aforementioned characteristics of Tokyo are explored from the viewpoint of an individual, a person whose inner time is imposed upon by the city and city's spatial and institutional realities.

3 Method

Semi-structured interviews were designed following Scannel and Gifford (2011), who synthesized an analysis of place attachment into an applicable three-part framework (person, place, process) that may be used for investigating this multidimensional concept. The person dimension refers to individually or collectively determined meanings, the place dimension emphasizes the characteristics of a place at the spatial level, and the psychological dimension includes affective, cognitive, and behavioural components. At the same time, studies of home as a multidimensional concept provide a framework for its examination as an integrated unity of physical, sociocultural, psychological, and temporal features (Dovey, 1985; Werner et al., 1985; Sixsmith, 1986; Després, 1991). Therefore, following the three-part framework, questions included 1) social, 2) spatial, and 3) temporal-psychological characteristics.

Thirty interviews were conducted with seventeen males and thirteen females living in the Greater Tokyo Area and working in the Tokyo Metropolis. Twenty-five out of thirty respondents were employed, two were self-employed, and three were students. The age of the participants was between twenty-three and sixty, and they belonged to the working-age population. The main focus of the study was on twenty-five young adults, as defined by Erikson and Erikson (1997), who were twenty-three to thirty-nine years old, and an additional five interviews were used to make comparisons across different ages.

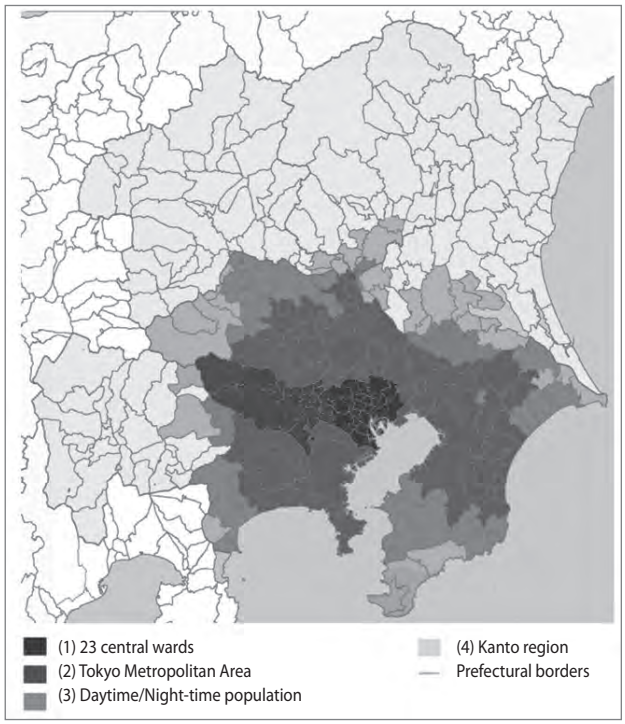

Figure 4: Tokyo borders: Tokyo central wards, the metropolitan area, and the Kanto region (illustration: Vedrana Ikalović).

Analysis of the interviews was based on "selective coding", in which all the categories stand in a relationship to the "core" category as conditions, action / interactional strategies, or consequences (Strauss & Corbin, 1997). Data collection and analysis were interrelated processes, and all the concepts and findings were incorporated into the following set of interviews. Interviews were from thirty to sixty minutes long, recorded, transcribed, and examined line by line. The data were generated following Strauss and Corbin (1997), Moran (2013), and Glaser and Strauss (2017)

In addition, the spatial and temporal systems of respondents are represented with time-space diagrams visualising the frequency of relocations and the length of dwelling in each city (Pred, 1984; Hägerstrand, 1985; Latham, 2003; Knowles & Sweetman, 2004).

Interviews were conducted, transcribed, and coded in English and, in order to avoid possible language barriers, keywords were discussed in both English and Japanese.

4 Analysis

Two main categories are recognized from the analysis of interviews: "fragmented temporality" and "lack of nostalgia". "Fragmented temporality" refers to spatial and temporal changes caused by frequent relocations, which are most obvious during

"operational life", feelings about these relocations, and the process of becoming at home (Dovey, 1985). "Lack of nostalgia" concerns questions about environments previously lived in, childhood homes, memories, and objects with meanings – that is, the concept of home as a place to store memories, a shelter, and a place one hopes to return to (Tuan, 1977; Dovey, 1985; Bachelard & Jolas, 1994).

4.1 Fragmented temporality

> I was born in Sasebo[8] . . . close to Nagasaki.[8] And . . . um . . . I lived there only one year. [From Sasebo I moved] to Kumamoto.[8] Again one year. And then . . . Mita[8] in Tokyo. And afterwards we moved to Ogikubo[8] in Tokyo and there . . . we were for something like five years. So I finished preschool and um . . . spent maybe two years at the primary school there. And then we went to Sendai.[8] Again five years. . . . [From Sendai I moved] to Niigata,[8] again five years. And there I graduated from high school and afterwards I passed the entrance exam for Sapporo[8] University in Hokkaido. So I moved to Sapporo. . . . In total I lived in Sapporo for eight years. . . . afterward I went to Greece for two years and then I moved to this area [Mitaka[8]]. . . . Now it's been about ten years. (Interview 22)

Tokyo residents move often, and childhood homes include different towns. In some cases, it is difficult or even impossible to say which city or town is their hometown among all the cities and towns they have lived in. The reasons for moving are different in different life stages: in childhood, it is the relocation of a parent (usually a father), and in adulthood their own relocation or the relocation of a spouse.

> My mother grew up in Tokyo so . . . she . . . delivered in a hospital in Tokyo but actually I grew up in Kansai. . . . In Nishinomiya.[8] So I . . . grew up in Nishinomiya . . . up to middle school, and after that I went to Manila. Because of my father's job. . . . After that we lived in Kobe, not far from Nishinomiya. Then . . . I moved to . . . to the Kanto area. . . . And after that I got married and because of my husband's work I went to Singapore. (Interview 19)

Respondents born in Metropolitan Tokyo moved from one Tokyo ward to another, whereas in the case of respondents born in small towns relocation meant different districts of the same town or different towns of the same prefecture. Movement and change of the place of residence has been an integral part of their lives.

> I was born in Akita prefecture. And it's the city of Akita, but not the same place. I lived there eighteen years . . . and we moved . . . . hmmm . . . maybe more than five times. My father was a policeman. So . . . so we had to move. (Interview 14)

The commuting hours of respondents that were born in suburban Tokyo (in surrounding prefectures, such as Saitama, and in Tokyo towns) are the longest, and some of them still live with their families in a family house. The sense of attachment and sense of home are different from two other cases because they have not changed their place of residence, although their place of work keeps changing; they are internally relocated every year to offices located in different Tokyo wards, and, because of that, they have to constantly adapt to the new working environment.

> Actually I wanted to change my job when I got relocated last time. . . . And . . . after that I . . . asked my manager to quit the job. I had already tried to find a new job, but she tried to . . . how can I say it . . . make me stay here. She said: I will try not to relocate you again. So . . . after getting used to the environment and the atmosphere I started to feel it's easy to work so . . . a few months afterward I didn't feel like I wanted to change jobs. (Interview 23)

A 29-year-old woman says she was relocated four times in four years, and now she is getting used to it. At first, it took a very long time to start feeling comfortable at work, but because the job itself is the same – the process is the same – she is now more relaxed. A woman in her twenties feels the same:

> Um . . . I think the first relocation . . . it took a long time [to adjust]. But now I have been doing it for a long time at this job, so maybe just one or two months. (Interview 25)

The commuting time from home to work every time is almost the same (about an hour and a half), and so in this sense there is no significant change: the process is the same and the time-space relationships do not change, although the place and working environment do. A twenty-four-year-old man started to live in Kyoto while working in Osaka. What he was not willing to change was the distance between his living place and place of work. The commuting time from his house in Kyoto to his office in Osaka was similar to the commuting time in Tokyo, which helped him adjust quickly.

A twenty-six-year-old respondent that was relocated to another city says the relocation changed his personality. Because of the nature of his work but also because of the frequent dislocations, he says that he is not afraid of change (anymore).

> Actually . . . it was difficult for me at first. . . . But . . . as I had more experience in changing places . . . I kind of got used to it. To introduce myself . . . start communicating with people. . . . Maybe one of the biggest experiences and changes in my mind is . . . that I am no longer afraid of changes. (Interview 26)

All homes previously lived in are juxtaposed. There is no superposition or home that is more significant than other homes, and all the places respondents lived in were important at the time. At the moment, the most important place is their current city – and, when they were living in another city, it was that other city. In interview number nine, a thirty-four-year-old man says:

> . . . when I get to Ayase[8] station . . . oh, I'm home. I can say. And also Shizuoka as well. Because I spent so much time there. . . . I used to live on the east side of London, in an area called Liverpool Street. When I'm there I would also say, this is my home. (Interview 9)

This is how a twenty-five-year-old man explains his sense of home:

> When I'm in Japan it really feels like home . . . but then when I went back to Australia it really felt like home. . . . then when I went to New York it really felt like home also . . . . (Interview 12)

4.2 Lack of nostalgia

Nostalgia is defined as a sentimental longing or wistful affection for a period in the past, a desire to return in thought or in fact to a former time in one's life, to one's home or homeland, or to one's family and friends; a sentimental yearning for the happiness of a former place or time. As such, it arises from changes; it is a spatial and temporal emotion, and it is associated with former significant people and places, and it is commonly explored as a concept that is inseparable from the concept of home. Talking about leaving and journeying is associated with the nostalgic feelings and sense of loss, roots, and belonging (Mallett, 2004; Casey, 2013). However, in Japan, nostalgia has been exploited and commercialized by the travel industry as a quest for a traditional lifestyle, and "the nostalgic imagination implies the return to a pre-industrialized, and nonurban past" (Creighton, 1997: 239).

In Tokyo residents' case, once they move, they do not seem to have nostalgic feelings about the places they leave. A thirty-one-year-old man feels that moving can be both troublesome and good, but he also finds it refreshing.

> At the same time [it is] troublesome and it feels good. . . . Because the atmosphere is changing and makes me . . . refreshed. And like . . . it changes my . . . thinking. Toward my job and toward my lifestyle. (Interview 28)

He was born in Fukuoka and he lived there for twenty-five years, but after moving to Tokyo he has moved five times in six years. His family is still in Fukuoka, and keeping in touch is reduced to the occasional gathering during winter or summer holidays or on special occasions such as weddings. However, he does not miss his family; he feels good.

Another respondent says that while living away he did not even keep in touch with his family and that he rarely responded to their calls, but only knowing that he could reach them was enough.

> . . . my mother calls me on the phone sometimes and later I didn't call them a single time . . . . If I felt lonely I could do that. I didn't feel lonely; I had friends and colleagues and a lot of communication through my work . . . that was enough for me. (Interview 26)

Once they leave the place, they rarely go back, and nostalgic feelings appear only during the visit. A twenty-six-year-old man says that he does not think about going back to Sendai or Osaka, where he used to live; he does not miss them, but he did use the word *nostalgic* to describe how he felt during a short visit to Sendai. It was only there, in the city, that he felt nostalgic. Both cities were important for him at the time, but he does not feel the need to return.

> Places that I lived? Maybe Sapporo. I'd like to visit it again. If I can't I don't care so much. Like that. . . . Otherwise . . . I met a friend from Sendai and he travelled there and he talked about many things . . . about the city . . . to me . . . "Well . . . that's nice", that was my reaction. Basically like most Japanese do, I am (also) worried about the Big Earthquake . . . Sendai is recovering.[8] "Oh, that's nice", like that. (Interview 22)

The return itself is not relevant, whereas the *possibility of return* is. If they do return, they do not return to places; they return to people. Family members also move frequently, and it is rare for significant people to live in a home that was previously lived in. As in the case of temporality, a significant difference appears between the interviewees born in small, local towns and respondents born in Tokyo. For the former, the family is often still living in the place of birth and, in one case only, in the same house. For the latter it is always a different house, not the one the respondents grew up in, and for this reason they do not have nostalgic feelings associated with the house itself (they are attached only to their families). This places the social aspect of home over the spatial aspect of home.

> Actually, because my parents are not from Fukuoka, but they live in Fukuoka,[8] when I go to their house I have . . . I don't have any friends there. . . . I go there to see my parents, but I don't feel it's my house. I don't have my room because when they bought the house I was not there. (Interview 21)

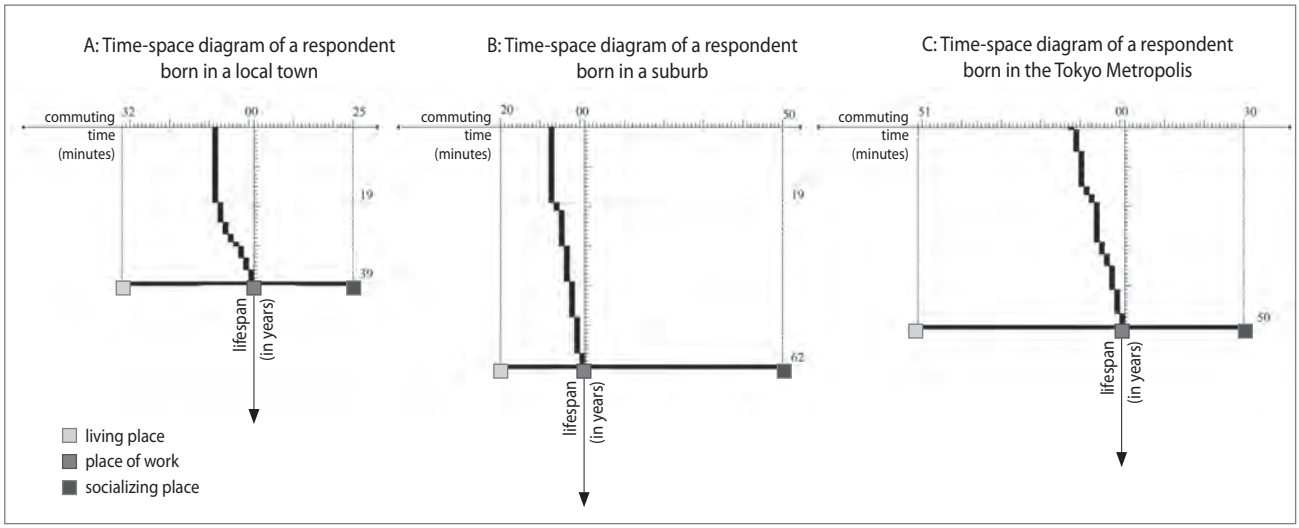

Figure 5: Time-space diagrams (illustration: Vedrana Ikalović).

For respondents that lived in different countries (twelve respondents lived abroad), it is also the city that they remember. If and when they go back, they always mention that they miss the city, their habits and habitual actions, lifestyles, and daily rhythms.

> Actually I will tell you honestly. When I lived in New York I never missed Tokyo. . . . I was living close to the Central Park, a very beautiful place, and perfect for jogging, walking . . . I was living in . . . what it is like in the Ginza[8] area . . . buildings, buildings, buildings . . . so I really needed to go out, to the park. I really wanted to. I was living on the twenty-fifth floor and . . . noise . . . smog . . . I really wanted to go to the park, green, trees . . . just watching dogs, people . . . so I felt relaxed. (Interview 18)

Memories of their childhood homes and previous homes are also memories of actions, activities, and processes (such as playing with their friends, walking to school, etc.). When mentioning the spatial properties of places previously lived in, they usually remember natural elements such as orchards, riverbanks, forests, and so on.

5 Discussion

The level of attachment and sense of home are discussed through three groups that emerged from the data and suggest different kinds of relationships with the city. Respondents born in small local towns in other prefectures belong to the first group, those born in Tokyo suburbs or neighbouring prefectures (such as Saitama in the north and Kanagawa in the south) to the second group, and those that were born in central Tokyo belong to the third group. In Figure 5, time-space diagrams were used to represent and visualize the time an individual lived in each city (vertical axis), their current location, and commuting time to the working and socializing place (horizontal axis). In cases A and B, respondents moved from a local town or Tokyo suburban area at age nineteen, and after moving to Tokyo the frequency of their relocations changed significantly. In the case of respondents born in Tokyo, the number of relocations is higher.

The first group of respondents has a sense of home that is clearly located: their (childhood) home is where their family is. They were born in small, local towns, and they had to move to another city to study and/or look for a job after graduation. Once they start working, their movement becomes more frequent, and the places where they moved for work become significant. The time-space relationship changes, and they usually live close to their place of work, in an apartment provided by the company. In these cases, participation in homemaking and involvement is low, and therefore the attachment to the place develops with time; however, it is an attachment to the lifestyle and the process rather than to the physical environment; it is an attachment to the place that is produced through the activities of people and institutions.

Respondents born in the Greater Tokyo Area usually live in their birthplace with their families during their studies. Commuting hours are long and they are mostly central Tokyo residents only during the day, constituting the daytime population of the city. The distance between the living place and university is acceptable, and it is not necessary to leave the family house during studies, even if commuting time is as much as two hours in some cases. With this group, relocations start and become more frequent once they start working. Relocation is manifested in two different ways: 1) respondents are relocated to another city, or 2) respondents are relocated to

different Tokyo wards and they change their place of work once a year. In this case, their place of residence is the same, the distance between the living places and places of work is more or less equal (between 1 hour and 20 minutes to 1 hour and 40 minutes), and their place of work and working environment change. The time-space relationship remains the same and therefore habitual actions do not change.

The third group has the weakest attachment to their physical environment and is the group that moves the most. In this group, place of birth and hometown are two different places. Respondents move mostly within Tokyo wards and they are attached to the process, to the lifestyle. Relationships that are developed with their environment can be easily recreated in Tokyo, and therefore the time of adjustment is short.

The attachment of the respondents from the first and second group to the childhood home is stronger because they remained with their families during the school years. They moved once or twice within the same town, and it was usually in the vicinity of the first home. Their place of birth is their hometown.

All respondents have developed strong spatial and temporal relationships with their urban environments, recreating them daily through activities and actions, and reconstructing them in a lifetime of relocations. Therefore, in different cities, as a result of habitual activities developed in a relationship with the city, different time-space relationships may emerge.

6 Conclusion

The new mobilities paradigm posits that activities occur while on the move, and it examines various modes of travel as forms of material and sociable "dwelling-in-motion", and places of and for various activities (Sheller & Urry, 2006). The contemporary city, where movement is an integral part of daily life and where a state of rest is achieved in public space, in motion, becomes a place that imposes upon a person's time-space routines and habitual actions. From residents' perspective and their time-space organisation, the city manipulates and impedes their daily dynamics and experiences as a spatial realm within which (semi)public and (semi)private places are connected by means of transportation on a daily basis.

In this study, a three-part framework is applied to the design of semi-structured interviews with young Tokyo residents conducted in order to understand their sense of home and level of attachment. Questions included social, spatial, and temporal-psychological characteristics; there were questions about spatial and temporal characteristics of places they previously lived (place of birth and hometown), about social relationships (significant others), and about memories of places and respondents' belongings and possessions. From those, it was possible to analyse the frequency of movement and dislocation, and how respondents felt about them.

Conceptually, two main categories were recognized: those of "fragmented temporality" and "lack of nostalgia". Fragmented temporality defines home as a progressive and embodied concept, not restrained by the physicality of the place. As presented, relocations are the most extreme in the case of Tokyo residents that spent their childhood in the Tokyo Metropolitan Area. Nostalgia, a feeling that is closely related to the concept of home and memories, was explored as a "need to return" but was shown to be a "lack of nostalgia". In a metropolis that provides and imposes constant accessibility, the importance of the former and the sense of loss are reduced, and the possibility of return is more significant than the return itself.

From these two categories, this paper introduces the dynamic sense of home, which is grounded less in physical or even social or psychological aspects of a place, and which is grounded in a familiarity with processes and in habituality. The role of the city manifests itself through the time-space relationships that individuals develop with the cities they live in. In Tokyo, specifically, through the dependence on the transportation system and through the time appropriation caused by institutions, the sense of home and attachment to the spatiality of place are altered. However, this is not the case only in Tokyo. As they keep growing, urban populations around the world are populations born in cities and raised in cities, and their attachments are developed in a close relationship with the city.

This article explored attachment and the sense of home from a qualitative point of view and emphasized people's sense of attachment to a city as a process that produces and is produced by the activities of people and institutions. For the concept of home, this signifies the shift from roots to routes, integrating movement and connections into the concept. Both traditional (static) and contemporary (dynamic) concepts of home highlight the connection between the planned, designed, and built environment, and the sense of belonging and attachment to places. The relationship between individuals and their environment is a consequence of the ways cities are planned, designed, and built. With this in mind, architectural and urban planning practices need to bring the conceptual and empirical research closer to one another, while cross-examining the perceived, conceived, and lived realities (Lefebvre, 1991) of the rising number of urban dwellers that "permanently temporarily" belong to the flows of interconnected contemporary cities.

Vedrana Ikalović, Keio University, Department of Systems Design Engineering, Yokohama, Japan
E-mail: vedra@keio.jp

Leonardo Chiesi, University of Florence, School of Architecture, Florence, Italy
E-mail: chiesi@unifi.it

Notes

[1] According to the Population Census website, as of 1 October 2010, the population of Tokyo was 13.16 million. This number was divided into three age categories: children (ages 0 – 14) at 1.48 million, working-age people (ages 15 – 64) at 8.85 million, and the elderly (age 65 and over) at 2.64 million. These figures are 11.4%, 68.2%, and 20.4%, respectively, of the overall population.

[2] The internal movement rate indicates the percentage of the workforce that has moved internally during the period. Internal movements are those resulting from employees' internal job changes within the organisation, whether through actions of relocation, promotion, or demotion.

[3] Such as *syataku*, *danchi*, and *doujunkai*: corporate towns (*syataku*) were homes encouraging or fostering a "corporate, family atmosphere". *Doujunkai*, on the other hand, was an association founded after the earthquake to provide public housing to city residents. *Danchi* (developed by the Japan Housing Corporation, now known as the Urban Renaissance Agency, UR) were owned by large corporations and they charged low or no rent to employees (Jinnai, 1995).

[4] According to a survey carried out by the Japanese Ministry of Health, Labour, and Welfare, 92.5% of companies with more than one thousand employees have relocated workers. The survey also found that the average length of relocations was 3.87 years (standard deviation 2.04 years), with the average length of the most extreme cases lasting for 13.43 years (standard deviation 8.45 years; Meyer-Ohle, 2009).

[5] According to 2010 census (Tokyo's History . . .), 4.26 million people (70.8%) work in the tertiary industry of commerce, transportation, communication, and services.

[6] Examples of definitions are the Standard Metropolitan Employment Area (SMEA) by Yamada and Tokuoka (1991), the Functional Urban Core (FUC) by Kawashima (1981), and the Integrated Metropolitan Area (IMA) by Takeuchi and Mori (1981). Recently, Kanemoto and Tokuoka (2002) proposed a new version called the Urban Employment Area (UEA). The Integrated Metropolitan Area of Shogo Takeuchi combines a municipality (city, town, or village) with another if doing so increases the internal movement rate (Kanemoto et al., 1996).

[7] The Greater Tokyo Area is the most populous metropolitan area in the world, consisting of the Kantō region of Japan, including the Tokyo Metropolis. The Tokyo Metropolis is one of the forty-seven prefectures of Japan. It consists of twenty-three central wards, twenty-six cities, three towns, and one village. All special wards are commonly referred to in English as cities, although the Tokyo Metropolitan Area is also referred to as a city.

[8] Sasebo, Nagasaki Prefecture; Nagasaki, Nagasaki Prefecture; Kumamoto, Kumamoto Prefecture; Mita District, Minato Ward, Tokyo; Ogikubo District, Suginami Ward, Tokyo; Sendai, capital of the Miyagi Prefecture (which was affected by the 2011 Tohoku earthquake); Niigata, Niigata Prefecture; Sapporo, capital of the Hokkaido Prefecture; Mitaka, Tokyo Metropolitan Area; Nishinomiya, Hyogo Prefecture; Fukuoka, capital of the Fukuoka Prefecture; Ginza District, Chuo Ward, Tokyo; Ayase Station in Adachi Ward, Tokyo.

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Atif Bilal ASLAM
Houshmand E. MASOUMI
Nida NAEEM
Mohammad AHMAD

Residential location choices and the role of mobility, socioeconomics, and land use in Hafizabad, Pakistan

Residential self-selection in developing countries and its relation to urban transportation are understudied and not fully understood. This knowledge gap is even greater in the case of small cities in the developing world. This study takes Hafizabad, Pakistan as a case study with the objective of providing data for future quantitative analyses about residential location choices in small cities on the Indian subcontinent. A sample of 365 residents was interviewed from four neighbourhoods with a combined population of 19,042. This resulted in individual and household response rates of 1.92% and 12.65% and confidence levels of ±5.08% and ±4.79% for individual and household questions. The results show that the most important factors influencing residents' decisions about moving are availability of utilities/services and affordable prices. Factors related to transportation, accessibility, and social issues, such as proximity to work and relatives, come next. The role of transportation in residential location choices in Hafizabad is less important in comparison to high-income countries. This finding shows how urban form can shape residents' travel behaviour and suggests that small cities are more compact and walkable because about 40% of job-related trips are made by walking. The results of this study will help inform relevant government organizations about how to effectively devise policies for small cities because policies grafted from large metropolises might not work well at a smaller scale.

Keywords: residential self-selection, urban transportation, human perceptions, Pakistan

1 Introduction

Over the past two decades, residential location choices have increasingly attracted the attention of urban transport researchers studying urban travel behaviour and land-use interactions. Scholars are interested in whether people choose to live in a neighbourhood where they can easily commute or access their non-work destinations or whether they choose where to live due to other factors such as mobility needs, the effects of the built environment, their perceptions and lifestyles, and socioeconomics.

According to the figures released by the Government of Pakistan (2017), the population of Pakistan has increased to 207.8 million from 132.4 million in 1998 (a 57% increase), showing an annual average growth rate of 2.40 during the inter-census period (1998–2017). Although there was a decline in annual growth from the previous inter-census period (1981–1998), the urban share of the population has increased to 36.38% (2017) from 32.52% (1998). This shows a growing phenomenon of urbanization and a trend of population concentration in urban centres. The existing urban housing stock is under growing pressure due to this, which has resulted in urban sprawl. Uncontrolled urbanization is becoming a major challenge for local planning agencies in Pakistan (Ahmad & Anjum, 2012). A number of development plans have been prepared by local planning agencies to control the situation; however, they have failed to meet their objectives. Hameed and Nadeem (2008) critically reviewed the urban master planning processes in Pakistan and found several reasons for unsuccessful implementation of these plans. One of the many reasons for failure in plan implementation was greater reliance on secondary data, minimum primary data collection, and inadequate public participation. Given this, many of the master plan proposals related to the housing sector (e.g., identifying future residential growth areas) do not meet people's aspirations and needs, thus hampering successful implementation.

Other than basic quantitative housing indicators, housing census data in Pakistan do not provide any insight into people's choices and preferences when choosing where to live. Further, there are not enough data for studying the role of transportation and other related factors in residential location choices in Pakistan (and other countries of the Global South). Many past studies on this topic have found a significant relationship between the built environment and urban travel behaviour. However, less well understood is the effect of residential self-selection on the relation between land use and transportation (Cao et al., 2009). Primary data become more necessary when one sees how rare findings for Pakistan and the developing world are. This situation provides a rationale to collect primary data on this topic in the developing world.

As a result, this study was conducted with the objective of providing reliable primary data to carry out empirical analyses on residential self-selection in small Pakistani cities. It is based on the overall hypothesis of this study: that the perceptions and behaviours of people in a "small city" in Pakistan will not be comparable to cities with a similar size in North America, Europe, Australia, and so on. In other words, the decisive cause of the behavioural difference is the context, not the size. However, inside the Pakistani or South Asian context, city size may be the reasons for behavioural mismatches. Because of differences in socioeconomics and lifestyles in large and medium-sized cities compared to small cities, these mismatches might be large. These behavioural disparities between different city sizes can be larger in the developing world compared to high-income countries (this needs to be tested and can serve as a hypothesis for other studies). This study addresses the lack of appropriate primary data suitable for investigating location choices, not only in small Pakistani cities, but also in cities of other sizes.

The first section of this article features an introduction, a problem statement, and study objectives. The next section reviews past studies conducted on related topics in various contexts, mainly in developed countries and countries of the Middle East and North Africa and the Indian subcontinent. The next section outlines the research methodology by presenting the research questions and hypothesis, case-study area profile, study variables, and data collection and analysis methods. Findings derived from the collected data in two broad sets of categorical and continuous variables are presented in the following section. The last two sections provide topic-specific discussion and the conclusions of the study.

2 Previous studies

Residential location choices are a part of self-selections, which are people's tendencies to make decisions about where to live, travel, life, and so on based on their needs, preferences, and attitudes. This has been the topic of empirical studies based on primary data collected in several countries, including the Netherlands (Van der Vlist et al., 2002; Zondag & Pieters, 2005; Ettema & Nieuwenhuis, 2017), Germany (Heldt et al., 2016), the UK (Kim et al., 2005), the United States (Schwanen & Mokhtarian, 2004; Bayoh et al., 2006; Waddell et al., 2007; Cao et al., 2010; Pinjari et al., 2011; Sener et al., 2011; Wang et al., 2011; Patacchini & Arduini, 2016), Canada (Fatmi et al., 2017), Japan (Ge & Hokao, 2006; Zhang et al., 2014; Yu et al., 2017), Ireland (Vega & Reynolds-Feighan, 2009;

Humphreys & Ahern, 2017), Italy (Chiarazzo et al., 2014), France (Palma et al., 2005; Buczkowska & Lapparent, 2014), Denmark (Næss, 2009), and Belgium (van Acker et al., 2014; Vos & Witlox, 2016). These studies range from literature reviews (Van der Vlist et al., 2002) to numerical analysis using national (Zondag & Pieters, 2005) and city- or regional-level census databases (Wang et al., 2011;Vega & Reynolds-Feighan, 2009; Pinjari et al., 2011; Sener et al., 2011; Buczkowska & Lapparent, 2014; Heldt et al., 2016) and mathematical modelling using primary data (Schwanen & Mokhtarian, 2004; Kim et al., 2005; Bayoh et al., 2006; Ge & Hokao, 2006; Næss, 2009; Chiarazzo et al., 2014; van Acker et al., 2014; Zhang et al., 2014; Patacchini & Arduini, 2016; Vos & Witlox, 2016; Fatmi et al., 2017; Humphreys & Ahern, 2017; Yu et al., 2017), as well as statistical analysis of data produced by simulators (Palma et al., 2005). Most studies were conducted with mathematical modelling using primary data. Geographically, most of the case-study areas have been located in the United States. Some studies have also been conducted on the topic in emerging and developing countries, such as China (Biying et al., 2012; Næss, 2013; Wu et al., 2013; Yang et al., 2013; Wang et al., 2016, 2018; Zhuge et al., 2016), Korea (Jun et al., 2013; Yi & Lee, 2014; Park & Kim, 2016), Thailand (Choocharukul et al., 2008), Vietnam (Tran et al., 2016), Chile (Balbontin et al., 2015), and Israel (Frenkel et al., 2013).

The share of residential location choice studies for the Indian subcontinent, the Middle East, and North Africa is small. Apart from some notable exceptions, such as studies carried out in India (Schwanen & Mokhtarian, 2003; Mulugaram & Rao, 2005; Srinivasan, 2005; Lall et al., 2006), Bangladesh (Choudhury & Ayaz, 2015), Iran (Masoumi, 2013), and Egypt (Ibrahim, 2017), a limited number of studies have been undertaken to present a better picture of self-selections in the countries of these vast regions. Studies related to Pakistan are almost non-existent in this literature. Given more frequent in-

Table 1: Methodological considerations of similar past studies (source: authors).

Study	Sample size	Response rate	Case-study areas	Response ratio	Data collection method
Ahmad, 1992	6,275 households selected through quasi-random sampling	–	Twenty-six zones of Karachi based on socioeconomic and neighbourhood characteristics	Not available	City-wide socio-economic survey in 1987–1988
Ahmad, 1993	6,275 households selected through quasi-random sampling	–	Twenty-six zones of Karachi based on socioeconomic and neighbourhood characteristics	0.38% (city)	City-wide socio-economic survey in 1987–1988
Cao et al., 2006a	6,000 randomly selected households	22.8% (1,368)	Six middle-income neighbourhoods belonging to three different periods in Austin, TX	4.64%	Self-administered mailed survey in 1995
Cao et al., 2006b	8,000 (6,746 valid) households randomly selected from a commercially maintained database	24.9% (1,682)	Eight neighbourhoods of varying characteristics belonging to two different periods in northern California	1.74%	Two rounds of self-administered mailed survey in 2003
Frank et al., 2007	Two sub-samples: 2,088 (2,056 valid) and 1,466 (1,455 valid) households selected from the SMARTRAQ study	30.4%	The thirteen-county Atlanta region	Not available	Computer-aided telephone interview in 2001 and 2002
Handy & Clifton, 2001	6,000 respondents and 75 interview participants	22.8% (1,368)	Six middle-income neighbourhoods belonging to three different periods in Austin, TX	4.64%	Self-administered mailed survey in 1995 and a focus group in 1997
Ibrahim, 2017	224 households	–	Seven residential districts of Alexandria	0.01% (city)	Field survey
Kitamura et al., 1997	5,472 randomly selected households	17.6% (963)	Five study sites, each comprising approximately a square mile in the San Francisco Bay area	Not available	Self-administered mailed survey
Painter, 1996	496 randomly selected pedestrians	–	Three similar streets and a footpath in London	Not available	On-street pedestrian survey in 1992
Mokhtarian, 2003	8,000 households	25.0% (2000: 1,358 valid workers)	Three neighbourhoods in the San Francisco Bay area	Not available	Self-administered mailed survey

vestigations of self-selections in India, rough generalization of findings can be made, but, due to some key differences (mainly related to religious beliefs), independent studies of the Pakistani context seem necessary. The findings of one of the rare studies on Pakistan were published in 1992 by Ahmad, who studied a sample of 6,275 households in Karachi using data from a city-wide socioeconomic survey conducted in 1987 and 1988. By analysing the data, she concluded that ethnicity is important in determining households' location choices and mobility. Ahmad also found relations between these considerations with urban sprawl and outward growth of Karachi. Another study was conducted by Connor (1989), who found that ethnographic ties, political involvement, and lack of political activity motivated residential association. These two Pakistani studies were conducted many years ago and had only a weak or no relation to urban travel behaviour.

A review of past studies shows that the topic has mainly been explored through quantitative methods with probabilistic sampling techniques as the main method for sampling and recruiting the respondents. Many such studies also used some samples already available – census data, previous studies, or any other maintained databases – to determine how large the sample size should be and to identify the target population. Neighbourhoods or residential districts remained the main unit of analysis for conducting many of these studies at different locations. The key considerations for the selection of these neighbourhoods were primarily similarities or differences in socioeconomic characteristics and the time period when these neighbourhoods were developed or inhabited. Two main data-collection approaches were employed: direct interviews through field surveys and self-administered mailed surveys. The limitation with the self-administered mailed survey is the low response rate, as is also evident from the review of such studies, because none of them could achieve a response rate of more than 33% (see Table 1). In turn, the response ratio (the sample coverage of the overall neighbourhood/city population in terms of percentage) ranged from a low of 1.74% to a high of 4.64%. Table 1 summarizes the methodology of some past studies.

3 Methodology

This study assumes that residential self-selections are context-sensitive; that is, people in Pakistan choose where to live differently compared to other contexts. These differences are very much connected to cultural issues (religion, local lifestyles, and mentality), socioeconomics (exemplified by people's different approaches to earning money), social classes and the connection to space, and geography (such as climate). It is assumed that these phenomena can motivate different approaches to residential location choices in small cities in the Pakistani context compared to the contexts in Western or high-income countries. This assumption is based on the hypothesis that the interrelations between urban space and urban travel behaviour (in this case, commuting to one's place of work or study) are highly context-specific, and so policymaking for urban mobility cannot be based on studies or concepts rooted in high-income countries, but must be based on local studies. This study presents data that provide a basis for in-depth analysis in future studies. The main question is how Pakistanis choose where to live in small cities.

3.1 Case-study areas

Life in large urban centres is a multitude of many complex processes, making it very difficult to create reliable findings out of empirical studies conducted in urban settings. Conducting such studies in large urban centres requires great investment of effort and resources to produce reliable conclusions. In comparison, smaller cities offer opportunities to reliably analyse less complex urban life through the established research frame. Accounting for many of the underlying factors is easier than in large urban centres. Given this fact, the small town of Hafizabad, located in the upper central Punjab region with a population of 245,784 (2017), was chosen to carry out this study (see Figure 1). According to the latest census (Government of Pakistan, 2017), Hafizabad has 37,270 housing units with an average household size of 6.6 persons – almost the same as the national average, at 6.5.

The large city nearest Hafizabad is Gujranwala (population 2.0 million in 2017), located 55 km to the east. Hafizabad has a strong link with Gujranwala and there is a commuting pattern between these two cities, although on a limited scale. The Hafizabad district is well known for its rice and cotton textile industries and, as the district capital, Hafizabad also offers job opportunities to its surrounding population, which commutes daily to the city centre (Naeem & Ahmad, 2018). The other large cities near Hafizabad are Lahore (population 11.1 million in 2017), located 102 km to the southeast, and Faisalabad (population 3.2 million in 2017), located 106 km to the southwest and with which there are socioeconomic links.

Although the history of the region where Hafizabad is located reaches as far back as 327 BC, to Alexander the Great's invasion of Punjab (Government of the Punjab, 2018), Hafizabad itself was founded by the city's namesake, Hafiz Meerak, a companion of Mughal Emperor Akbar I (1542–1605). The older central part of the city thus has some visible features reflecting an urban layer of Mughal architecture dating back to the sixteenth century. After the fall of the Mughal Empire,

Figure 1: a) Location of Hafizabad in Pakistan (source: Google Maps, 2019); b) Location of Hafizabad in the regional context (source: Google Maps, 2019).

Figure 2: Various urban layers of Hafizabad (photo: Anwaar ul Haq).

Table 2: The four case-study neighbourhoods selected.

No.	Neighbourhood	Period	Grid type	Population (2018)	Gross area (ha)	Net area (ha)	Gross population density (per ha)	Net population density (per ha)
1	Gali Haji Miraj Deen	pre 1947	Organic	3,584	5.5	4.9	649.11	730.54
2	Sharifpura	pre 1947	Organic	3,298	31.5	27.4	104.64	120.26
3	Nawab Colony	1947–2000	Semi-grid	4,299	8.9	6.8	484.88	636.74
4	Hassan Town	post 2000	Full-grid	7,861	22.7	20.1	346.73	514.64

Table 3: Urban characteristics of the selected case-study neighbourhoods.

No.	Neighbourhood	Links	Nodes	Link-node ratio	Intersection density (nodes/ha)	Facilities				Per capita facilities
						Retail	Health	Religious	Total	
1	Gali Haji Miraj Deen	66	59	1.12	10.73	43	1	–	44	0.012
2	Sharifpura	190	168	1.13	5.33	119	–	–	119	0.036
3	Nawab Colony	44	35	1.26	3.93	66	–	1	67	0.016
4	Hassan Town	83	45	1.84	1.98	72	–	1	73	0.009

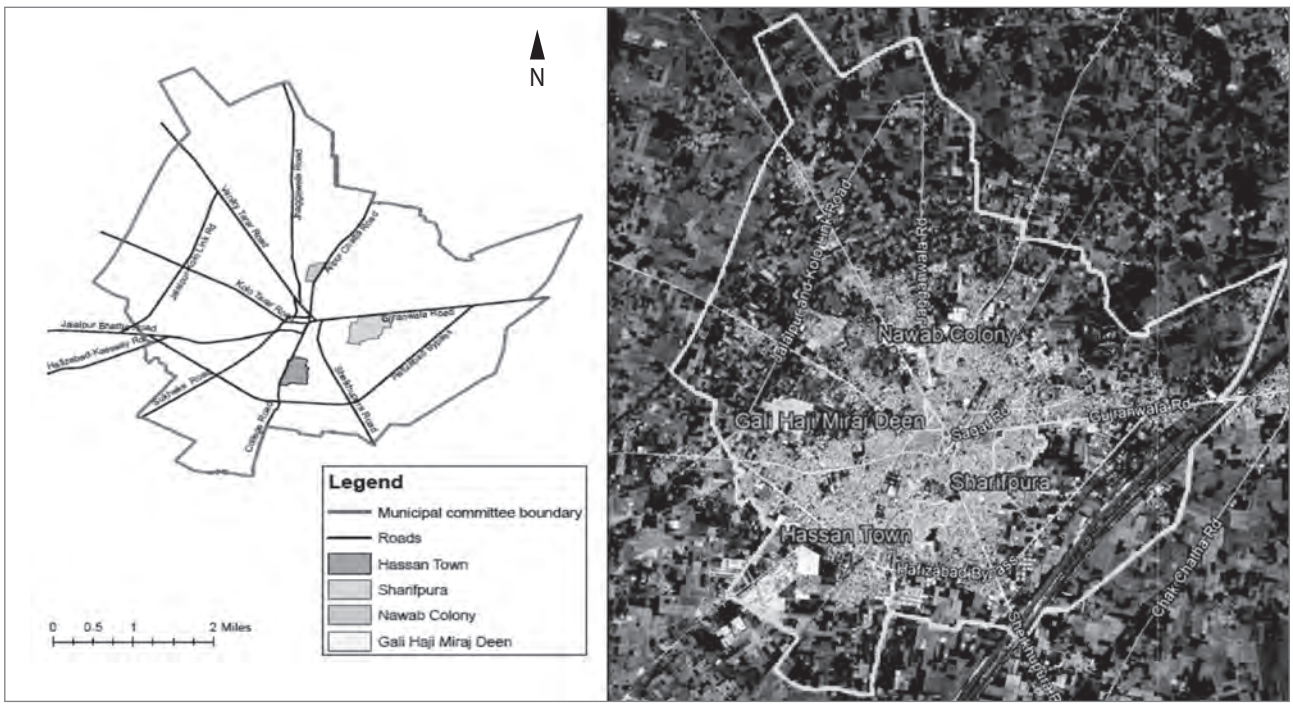

Figure 3: Location of the neighbourhoods studied in Hafizabad (illustration: authors).

the entire Indian subcontinent operated under British colonial rule until 1947. During that period, British rule made an indelible impression on the region's urban fabric through Victorian architecture. The same is the case with Hafizabad, where vestiges of the colonial urban layer can be seen in the central parts of the city. This urban layer is part of the pre-partition (i.e., pre-1947) built environment of Hafizabad. After Pakistan's independence in 1947, much of the Hindu and Sikh population of the city migrated to India, and, in turn, many Muslims from India settled in Hafizabad. This demographic transition helped transform the urban landscape of the city, thus giving rise to an urban layer of the post-partition period (from independence until the late 1990s). Pakistan's 2001 National Housing Policy declared housing a priority sector, resulting in a real estate boom. Small cities like Hafizabad were no exception. They also faced the consequences of urban sprawl in the form of housing developments outside of municipal borders, although it was less intense than in larger cities. This gave birth to the third urban layer: newer planned developments and gated communities. The various urban layers of Hafizabad are shown in Figure 2.

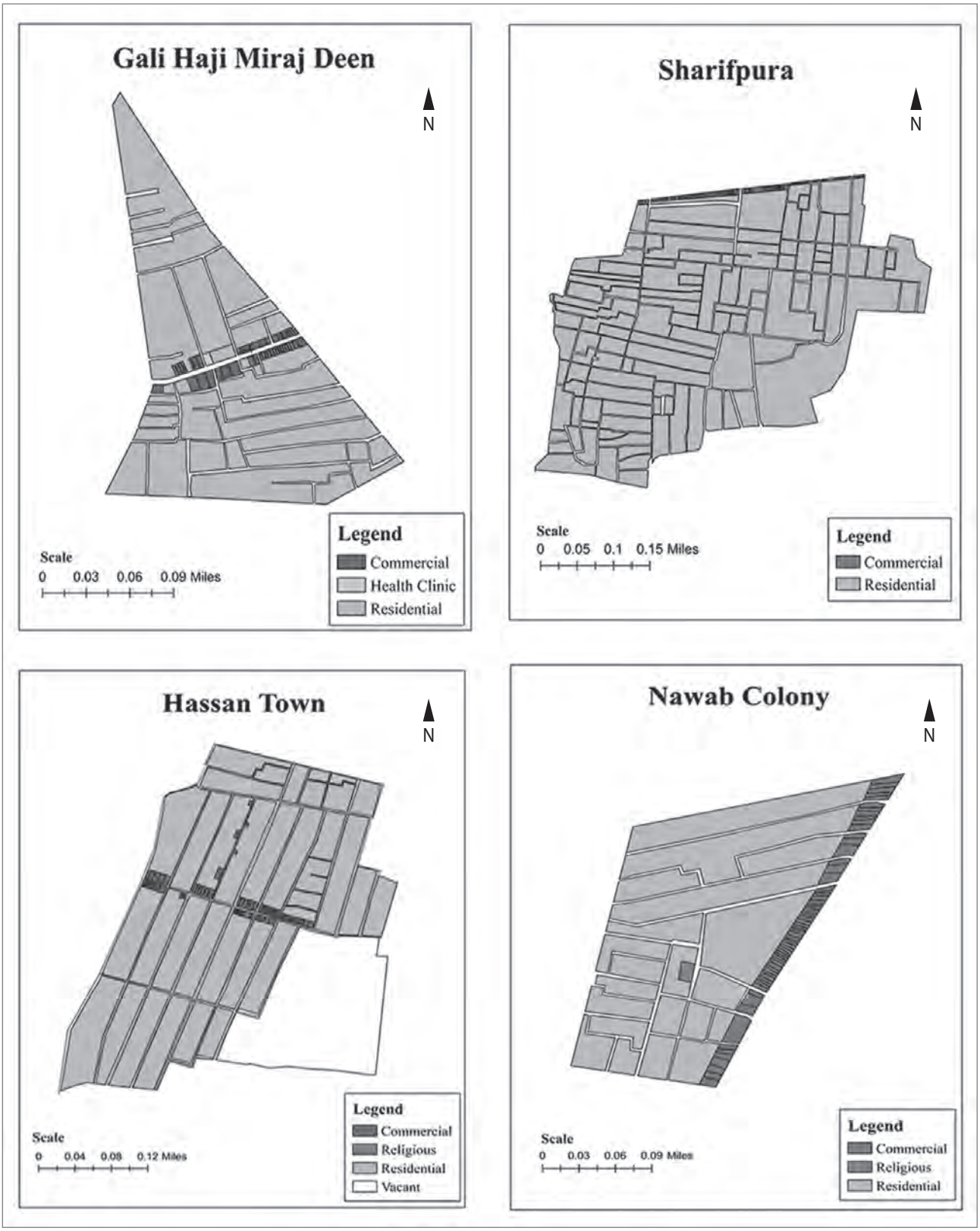

Figure 4: Land-use functions of the selected case-study neighbourhoods (illustration: authors).

Identifying various urban layers helped in selecting case-study neighbourhoods based on differences in the built environment. Differences in the urban character also reflect some differences in the socioeconomic status of their residents. The city mainly grew to the south to accommodate newer developments, including planned housing schemes. Four neighbourhoods in Hafizabad were selected for detailed investigation based on the main criterion of a distinct urban form. Two of them belong to older central parts of the city, one in the northern part having a semi-grid form, and one chosen from the new developments in the southern part of the city. The urban characteristics and details of the facilities available in these four neighbourhoods are provided in Tables 2 and 3, and their location within the city is shown in Figure 3. The urban form and available facilities in each neighbourhood are shown in Figure 4.

3.2 Data, variables, and analysis

The survey was divided into three parts: household and socioeconomic information, current dwelling unit characteristics, and housing demand characteristics. It included sixteen questions, some of which consisted of more than one question or conditional questions. The questionnaire contained six individual questions (age, sex, marital status, employment, commuting time, and commuting mode), and ten household questions covering vehicle ownership, type of housing, reason for choosing the place, date of moving, main reason for moving, owning another housing unit, number of owned housing units, vacant/occupied housing, tenure type, unit price, unit rent, search for new housing, neighbourhood preference, main reason for choosing where to live, and preferred tenure type. Except for the number of housing units owned, all of the variables are categorical. The questionnaires were completed by the interviewers while talking to the respondents.

The survey provides exploratory data for the case-study neighbourhoods with a high level of precision. The sample sizes and the estimated confidence intervals were based on Cochran's (1963) formulation. These figures were calculated separately for individual and household questions. The household confidence intervals were calculated using the average household size of the city (6.6, based on the 2017 census result). As a result, 1.9% of the 19,042 residents in the overall population (N) were interviewed. Regarding household questions, the survey collected data for about 12.7% of the city's households. This provides a confidence interval of ±5.1% for individual questions and ±4.8% for household questions. The confidence intervals for neighbourhoods are given in Table 4, which summarizes the sample size for each question, based on the general sample of 365 respondents.

The analysis included frequency reports related to categorical variables and descriptive statistics reports related to the number of housing units owned (the only continuous variable). This was done after validating and correcting the results, which was primarily done for the Nawab Colony data, which contained some problematic input that was removed from the sample.

4 Results

A summary of the collective findings regarding categorical indicators for the overall sample of the four neighbourhoods is presented below. Among the respondents, 45% were thirty-six to forty-five years old, with 84% male. Balancing the number of male and female respondents proved to be difficult due to cultural considerations. Similar to the high share of middle-aged respondents, 82% of the survey participants were married and 78% were employed full-time.

Consistent with several other surveys conducted in neighbouring countries and nearby regions, household vehicle ownership was targeted instead of individual ownership. In such cultures, it is more likely that household members use vehicles together. In this vein, 56% of the households owned one motorbike, 22% had no car, and only 5% had one car. A large percentage of the responding households (87%) owned self-built houses, whereas only 12% lived in rented housing. As expected for the case of a small Pakistani city, 41% of the households (such as young couples or similar) lived in their family's houses. Living on family property was the most important reason for choosing the current place of living. Living in a family property is followed by two weaker reasons: 16% of the households chose their current house because it was located in a nice neighbourhood, and 14% found the current house affordable. A large share of the respondents (73%) reached their place of work or education in less than thirty minutes. Walking and riding a motorbike are the dominant commuting mode, each making up 40% of the responses. More than one-third of the responding households had moved at the time of the survey. This share of the sample is the focus of this article for studying motives for moving and self-selections. The most frequently cited time of the last move was between two and ten years ago (42%). The living unit type or neighbourhood was the most important reason for 15% of the respondents, considering that 65% did not answer this question because they had not moved before. Transportation was a motive for moving for almost none of the households surveyed (0.27%). Only 18% of the households in the sample owned a second living unit, about half of which were occupied.

Table 4: Neighbourhood-level sample characteristics and overall sample.

Neighbourhood	Census district	Projected population	Number of households*	Number of subjects interviewed	Neighbourhood-level validated sample size (*n*)	Response ratio for individual variables (%)	Response ratio for household variables (%)	Confidence interval for individual variables (%)	Confidence interval for household variables (%)
Hassan Town	12	7,861	1,191	100	100	1.27	8.40	9.74	9.38
Sharifpura	10	3,298	500	100	100	3.03	20.00	9.65	8.77
Gali HajiMiraj Deen	6	3,584	543	100	100	2.79	18.42	9.66	8.86
Nawab Colony	5	4,299	651	98	65	1.51	9.98	12.06	11.54
Total sample	–	19,042	2,885	398	365	1.92	12.65	5.08	4.79

Note: *Calculated by the average household size of Hafizabad (6.6).

Only 11% of the sample rented a living unit, and all the others lived in their own house. More than half of these houses cost between PKR 1.5 and 3 million. Of the 11% that rented a house, 68% paid less than one-third of their income for rent. In the future, 28% intend to search for a new house. About half of the sample is interested in continuing to live in their current neighbourhood in the future, whereas 45% will look for housing in another neighbourhood in Hafizabad and the remaining 5% are interested in leaving Hafizabad and living in another city, most likely Lahore. Having good services and utilities (neighbourhood amenities) is the most important reason for moving for 23% of respondents, followed by a reasonable price for 20%. Transportation (proximity to work) is a reason for 17% of the households. Finally, 91% would prefer to move into their own house in the future.

The above information is related to the overall sample of respondents from all four neighbourhoods. To understand the role of different urban forms and environments on respondents' choices in each of the four neighbourhoods, the outputs of the categorical variables were analysed separately for each case site and also presented in graphs. Selected graphs are presented in Figure 6. Hassan Town had the youngest respondents (44%), whereas Gali Haji Miraj Deen and Sharifpura were older, with 25% of the respondents aged forty-six or older. Women had the largest share in Hassan Town (32%), and the smallest share of unmarried respondents came from Nawab Colony (28%). Gali Haji Miraj Deen had the largest share of full-time employees (84%), the largest share of people with one motorbike (62%), and the highest car ownership rate. Self-built houses are found equally frequently in Gali Haji Miraj Deen, Sharifpura, and Hassan Town (86–88%), and the highest share of house-renters came from Gali Haji Miraj Deen (10%). However, living on family property is the dominant form of housing in the overall sample. Affordability, proximity to work, and living in a nice neighbourhood are the most important reasons for respondents living in their current house. The sociocultural status of this subset is slightly different from the entire sample. Hassan Town had the shortest commuting distances, with 79% of respondents reporting that their trips take less than half an hour. This figure falls to 67% for Nawab Colony. Nawab Colony also has the lowest walking mode (28%). Half of the households in Hassan Town have already moved, compared to 27% in Sharifpura. More than half of the responding households in Nawab Colony moved within the past two years, whereas 40% in Gali Haji Miraj Deen moved over ten years ago. Transportation reasons were important for only 1.5% in Nawab Colony and were not a reason for moving in the other areas surveyed. Possession of another living unit is seen most often in Nawab Colony (28%). At 88 to 90%, house ownership is almost equal in the four neighbourhoods. According to the self-reported findings concerning house prices in this survey, the cheapest houses are found in Hassan Town (29%), whereas the most expensive houses are in Nawab Colony (16%). In Hassan Town, 91% of respondents spend less than one-third of their income on rent. The highest share of households surveyed intending to move is in Sharifpura (32%). For the overall sample, 41 to 54% of responding households intend to remain in their neighbourhood in the future. Respondents in Hassan Town showed the least interest in moving out of the neighbourhood (37%). For respondents interested in moving to another city, Lahore is more likely to be selected compared to more distant cities. In Gali Haji Miraj Deen, the most important reason for deciding where to live in the future is the availability of services and utilities (31%). In Sharifpura, the main motives are affordability (22%), followed by availability of services and utilities (21%), and proximity to social relations and relatives (20%). Affordability (30%) and proximity to work (29%) are by far the most influential reasons in Hassan Town. Finally, respondents in Nawab Colony look for services and utilities (29%) and a quiet environment (23%) more than other issues. Between 85 and 99% of the respondents of the four neighbourhoods would like to own a house when they move in the future.

Average house area	Valid		Missing		Total	
	N	Percent	*N*	Percent	*N*	Percent
	350	95.9%	15	4.1%	365	100.0%
Descriptives						
Mean		Statistic	122.33	Std. deviation	Statistic	50.183
		Std. Error	2.682		Std. error	–
95% confidence interval for mean	Lower Bound	Statistic	117.06	Minimum	Statistic	20
	Upper Bound		127.61		Std. error	–
5% trimmed mean		Statistic	118.49	Maximum	Statistic	379
		Std. Error	–		Std. error	-
Median		Statistic	126.00	Range	Statistic	359
		Std. Error	–		Std. error	–
Variance		Statistic	2518.302	Interquartile range	Statistic	37
		Std. Error	–		Std. error	–
Kurtosis		Statistic	3.989	Skewness	Statistic	1.428
		Std. Error	0.260		Std. error	0.130
Tests of normality						
Category	Kolmogorov–Smirnov			Shapiro–Wilk		
	Statistic	df	*p*-value	Statistic	df	*p*-value
	0.242	350	< 0.001	0.875	350	< 0.001

Figure 5: Descriptive statistics and normality test for the area of the respondents' housing (source: authors).

The survey included only one continuous variable: the area of housing owned by each household. The descriptive statistics related to this question are presented in Figure 5. Out of 365 respondents, 350 answered this question. The areas range from 20 m^2 to 379 m^2, with a mean of 122.3 m^2 and a standard error of only 2.68 m^2. The large range of 359 m^2 is due to some outliers at the upper end of the range. The results of the Kolmogorov–Smirnov and Shapiro–Wilk tests of normality yielded *p*-values of less than 0.001, indicating non-normality.

5 Discussion

Like many previous studies on this topic, this study employed quantitative methods to generate findings on the residential location choices of Hafizabad residents. In line with previous studies, the neighbourhood was selected as the unit of analysis. The sampling frame for conducting this study was the census data for the neighbourhoods. Similar to the majority of previous studies on the same topic, the methodological consideration of selecting four neighbourhoods in Hafizabad was based on differences in urban character and different periods they belong to. Because the literature review indicated a low response rate for indirect data collection methods (i.e., self-administered mailed surveys), direct interviewing through field surveys was selected as the data collection method. The response ratio of 1.92% for this study is within the range reported by past studies conducted in the developed world. The discussion presented shows that the chosen methodology is in line with many previous studies on similar topics in developed country contexts. This indicates the reliability of the findings of this study.

The findings reveal that, for the majority of the respondents that own their self-built houses and have lived there for more than two years, their main reason for choosing their current housing location is the family's property. The high homeownership rate in Pakistan stands in sharp contrast with the situation in the developed world. An increased ratio of home ownership reduces overall housing mobility; consequently, the majority of respondents consider their family's property to be the main deciding criterion for determining where to live. Owning houses reflects socioeconomic status within Pakistani society, which does not provide much motivation to rent housing units. The joint family system as a dominant living style of many of the households in developing countries may also foster the importance of family property as the leading criterion for residential location choice. These findings are not in line with the results of studies conducted in the developed world.

Proximity to the workplace did not turn out to be one of the leading reasons for current residential location of the respondents. This could be a reflection of the small size of the city, where most jobs are not as distant from homes as is sometimes the case in larger cities. Around three-fourths of the respond-

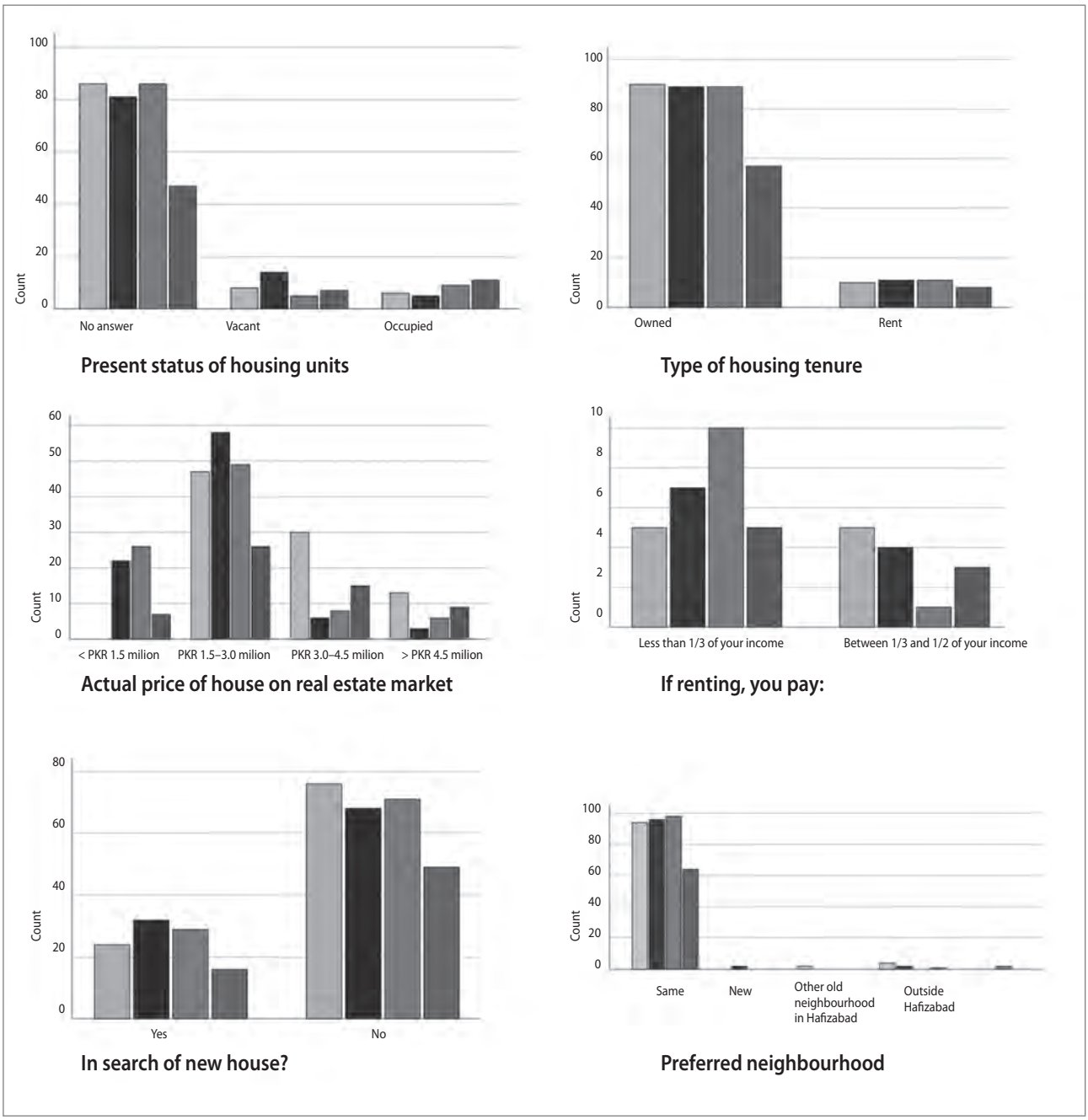

Figure 6: Selected graphs presenting the frequencies of responses for variables analysed for case-study neighbourhoods (source: authors).

ents require less than thirty minutes to reach their jobs, and the preferred mode of travel for around 40% of respondents is walking. This shows a good job-housing balance and could be representative of other smaller cities in Pakistan, which generally grew organically with fewer planning controls. This also provides a clue for why proximity to work is not among the leading factors for residential location choice in a small city. This is further strengthened by the finding that transportation was not a motivating factor for any of the households that had moved in the past. Again, such findings contrast with findings from studies conducted in the developed world. In another study by the authors (forthcoming) in a large urban centre of Lahore, the average commuting distance to work for a residential neighbourhood was found to be 8.4 km; investigating the factors for residential location choices in that sample might yield different results. The insignificance of transportation or proximity to work in influencing residential location choice in smaller cities suggests that a massive push toward transit-oriented development might not be a wise strategy for smaller cities in the developing world.

Another important insight from this study is the intent of out-migration. Although the share of current residents intending to move out of the city is only 5%, the tendency of out-migrating to larger cities (especially Lahore) is a notable finding. Although the reasons for such intentions are unknown, relevant municipal government departments should try to devise policies to help curb the urbanization of larger cities in Pakistan. The city of Lahore is already saturated in terms of size and population, and the continuous addition of population through in-migration from surrounding small cities will aggravate the situation by further overburdening the existing infrastructure.

The main limitation of this study is that only around one-third of the respondents moved in the past and were thus able to provide the main deciding factor behind deciding where to live. This was due to the high homeownership rate in Pakistan. For all other respondents, the questions inquired about their intentions to move in the near future and their anticipated deciding factors for deciding where to live. However, only one-fourth of the respondents reported that they were searching for a new home. Furthermore, because the responses to such questions related to an uncertain future time, they might vary at the time of actual moving. This shortcoming of the collected data was addressed by asking respondents about their current intentions to move, and therefore this limitation will not have any significant impact on the reliability of the findings.

6 Conclusion

The methodology of this study was carefully designed in line with the methodological considerations of many previous studies conducted in the developed world. Due to the high home-ownership rate in Pakistan, a family's current housing was the leading deciding factor when deciding where to live. Access to transportation facilities or proximity to jobs were not leading factors in deciding where to live. This could be a manifestation of the small size of Hafizabad, where the study was conducted. It also reflects the fact that small Pakistani cities are more compact, are denser, and have a good job-housing balance compared to large cities. These findings allow relevant policy-oriented circles to better devise urban and transportation policies to achieve the objectives of transit-oriented development, address low-income housing issues, and manage the urbanization of large cities. This study shows that transportation factors are insignificant in deciding where to live in a small city with a population of 245,784 (2017). However, the situation in large urban centres could be different and should be investigated more thoroughly. Similar studies on the large urban centres of Pakistan are needed to understand the situation more clearly. Furthermore, this study presents survey results in a descriptive form only, and further empirical studies are needed to ascertain the relationship of different variables and corroborate this study's findings. It is suggested that similar studies be replicated in other smaller cities of the developing world with a particular focus on the younger population, especially young couples or families, because their decisions will significantly shape the future course of urban commuting patterns.

Atif Bilal Aslam, Department of City and Regional Planning, University of Engineering and Technology Lahore, Pakistan
E-mail: atif.aslam@uet.edu.pk

Houshmand E. Masoumi, Centre for Technology and Society, Technical University of Berlin, Germany
E-mail: masoumi@ztg.tu-berlin.de

Nida Naeem, Department of City and Regional Planning, University of Engineering and Technology Lahore, Pakistan
E-mail: nida.naeem64@yahoo.com

Mohammad Ahmad, Department of City and Regional Planning, University of Engineering and Technology Lahore, Pakistan
E-mail: ahmadnoul786@gmail.com

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Vladimir KHALIN
Natalie KIELY

Degradation or regeneration? Prospects for developing the port-city interface in Odesa

Seeking an optimum sustainable development strategy is a core objective of municipalities and innovative urban planners around the world. Various viewpoints and interests regarding the interface between ports and cities and the resulting extensive waterfront regeneration in principal seaports render spatial planning projects of this type complex to complete and obtain agreement on. For a modern city, port development is a principal source of influences and benefits related to ecology, society, and transportation. Currently, the world's largest seaports are moving cargo terminals out of historical city centres. As a result, ports are assuming more advanced functions unrelated to the maritime industry, and thus projects that equitably share port territories will naturally gain momentum. The most significant projects for moving cargo ports out of historical town centres and regenerating port areas are found in European cities. To understand the various approaches, examples from European regeneration projects for port territories in Bilbao, Barcelona, and Oslo are presented, and their experience with various geographical and town-planning conditions is highlighted. This study is devoted to the Ukrainian port city of Odesa. It identifies the most successful strategy for developing the port-city interface under current economic and geopolitical conditions. It combines the ideas and studies of city planners in management, economics, and transport geography along with various policies and sociology aspects to provide new information and understanding aimed at ensuring the sustainable development of coastal cities in developing countries.

Keywords: urban regeneration, port-city interface, waterfront regeneration projects, Odesa seaport, Ukraine

1 Introduction

The regeneration of ports reflects a uniform strategy for the competitive development of twenty-first-century port cities. The globalization of the economy, focusing on the service sector, shows that port cities are becoming the main players in the battle for economic leadership. As a rule, seaside cities develop into laboratories for waterfront regeneration processes. The waterfronts of the leading port cities are being transformed from twentieth-century industrial zones and port terminals into residential, commercial, tourism, and recreational facilities. These cities offer new opportunities for innovative ideas and utilizing the most valuable coastal part of the city centre (Hoyle, 1989, 1998a, 1998b, 2000).

Currently, thirteen seaports are operating in Ukraine. Five ports located in Crimea are excluded from this study due to the annexation of this territory by Russia in 2014. Ukraine's seaports are spatially divided into five regional groups, serving adjacent industrial enterprises and domestic and international transport corridors. The largest group is the ports of Odesa, known as "Big Odesa" (the Odesa port agglomeration), which includes Odesa and the satellite towns of Yuzhne and Chornomorsk, accounting for about 54% of all turnover at Ukrainian seaports (Demyanchenko, 2013).

The port of Odesa is located in the centre of this large city, which has a population of over one million. Odesa developed on land conquered from the Ottoman Empire by the Russian Empire at the end of the eighteenth century. The port contributed to the rapid growth of the city on the northern coast of the Black Sea. The transition from communism to democracy and the disruption of economic ties were reflected in the sea freight industry. With the collapse of the USSR, turnover suddenly dropped to less than half its previous volume. The cargo capacities of the Odesa port agglomeration were designed to serve the Soviet Union, with a population of 250 million, whereas the population of modern Ukraine is less than 42 million (Internet 1, 2019). The seaport area and the length of the pier have remained the same, but the seaport equipment has become obsolete.

Ultimate failure to develop an effective strategy in the maritime industry and harmonize it with city planning resulted in the large-scale construction of grain terminals in the historical city centre, which has caused transportation and environmental pressures on the centre of Odesa. Such intervention in the planning structure of the city will have irreversible consequences and will lead to the degradation of the historical centre. The accumulation of large cargo projects in the port of Odesa is at odds with global trends in moving cargo terminals out of the city centre, and this therefore does not make it possible to alter their functional purpose for the city and, consequently, does not allow the port to serve the public interest. Because of the enormity of the port infrastructure in its current structure, its modernization and reconstruction demand considerable means. However, the ports of Ukraine have no such means, and state support for all ports is insufficient. The troublesome property relations in seaports, and intra-port and inter-port competition between various actors leads to confusion and the loss of freight traffic. In this time of globalization, the transformation of ports and their waterfronts is closely connected with global economic restructuring, technological changes in production, organizational process changes in the industry of coastal areas, and competition between cities in the global hierarchy (Schubert, 2011). Because transformation and its acceleration are irreversible, for Ukraine the beginning of positive change is only a matter of time. At the same time, delay is fraught with negative consequences.

This study analyses current concepts and projects related to regenerating port areas in major EU cities, emphasising the key prerequisites for carrying them out. It develops a spatial planning model for Ukraine's major port cities, such as Odesa, Mykolaiv, and Kherson, focusing on the influence of public institutions on processes at the port-city interface.

2 Literature review

Regeneration of port territories is becoming an increasingly interdisciplinary phenomenon in urban planning, and it requires the attention of various disciplines: geography (Hoyle, 2000), planning policies and strategies (Fainstein, 1994), environmental science (Georgison, 1995), architecture, ecology, and engineering (Hudson, 1996). Many studies (Breen & Rigby, 1993, 1996; Davies & Herbert, 1993; Ashton et al., 1994; Hasson & Ley, 1994; Krausse, 1995; Norcliffe et al., 1996) show that the port-city interface has become a place where the struggle between various port and city forces achieves a substantial form. It is essential to involve stakeholders and the general public in planning and decision-making, starting from the initial stage of the concept discussions and pre-project solutions.

In Ukraine, the complex subject of port regeneration has not been thoroughly investigated; attention has only been turned to the general planning concept of coastal territories. Several previous studies have examined fundamental problems of the planning organization, construction, and reconstruction of coastal territories (Glazyrin, 1998, 2003; Onishchenko, 2008; Kirichenko, 2015). Alternative analyses have also examined resort and recreation zones in some articles (Panchenko, 1999, 2007; Urenev, 2003). One study analyses the state and devel-

opment trends of Ukraine's sea trading ports (Demyanchenko, 2012, 2013). According to Brian S. Hoyle (2000), an expert on the port-city relationship, relocating seaports from the city centre and the revival of waterfronts is an evolutionary process that began in the 1960s in North America, in the 1980s in the seaside cities of Europe, and in the 1990s reached Japan, Australia, and South Africa. Waterfront regeneration projects have affected more than one hundred cities around the world. Most of these projects focus on the restoration of urban functions and are based on economic, ecological, and social studies (Hoyle, 2000).

Urban waterfront renewal projects create new relations between cities, their customs, and residents, and they offer unique opportunities to study harbours and new urban functions based on their economic, ecological, and social aspects (Oakley, 2011). Schubert (2009) identifies innovative technologies in marine transport that influence the conversion of embankments and port terminals to meet the needs of vessels and containers. Large-scale port area regeneration projects have taken place since the early 1980s. Because of increased automatization, the principal ports have become less significant on the urban market. This is one of the key reasons why principal cities are now less dependent on port terminals for local economic growth (Jacobs et al., 2010). To a greater extent in the world's most significant ports, local employment rarely exceeds a few thousand jobs. Several trends, including containerization, automation, and economies of scale, have made port operations more capital intensive and land-based, but less labour intensive. Over the past decades, many ports have become more productive and competitive (Merk, 2013).

Many port cities promote activities relating to tourism as an alternative to a commercial cargo port and its related shipping activities (McCarthy, 1996, 1998). This is occurring across Europe and in many cities around the world. Especially impressive changes have occurred in Mediterranean cities, which have increased in importance for the global development of tourism. According to Daamen and Vries (2012), regenerating port territories demands special attention because these places are widely recognized as some of the most challenging in modern spatial management and planning.

A variety of environmental impacts are related to a port's activity, such as shipping activity in the port, activity on the port's land, and transport to and from the port. The main impacts are related to air pollution, water quality, soil, waste, biodiversity, and noise. These environmental issues can have severe consequences on the health of the population in a port city, especially in poorer neighbourhoods (Merk, 2010). Brand (2007) argues that changing the role of coastal zones in urban canvases makes one think of the relationship between city and sea as one of the main environmental issues of the twenty-first century.

Currently, deindustrialization is a critical orientation in projects to transform a coastal city's waterfront. Key cities adopt a similar method of urban evolution: the industrial port moves from the centre to territory claimed from the sea, thus freeing spaces for cultural, commercial and tourist sites in the old port zone. In line with the city's sustainable development strategy, the process of business diversification and its profound impact on the social environment is inevitable. The terms *regeneration*, *renovation*, *revitalization*, and *redevelopment* have many values connected with various processes and planning solutions. However, in the context of port territories, they are united by a uniform "evolutionary" process involving the new use and function of deindustrialized territory. The model of city-port evolution (Hoyle, 2000) shows a chronological character of the relationship and, in the final stage, cooperation between the port and the city is resumed and continuous, the waterfront becomes dynamic, and the port moves from the centre to more convenient areas. These fundamental characteristics of the processes and phases of re-planning the waterfront reflect patterns of urban development around the world.

The considerable improvement of a port's function leads to renovated and extended passenger terminals, reduced military harbours, and the relocation of cargo capacities from the centre to the city's suburbs. Areas that port activity is relocated from change their functions from production to public, business, and recreation. Ports that were previously inaccessible to the public and cut off from the city by railways and highways now become active, turning into hubs with various types of recreation and entertainment activities. Newly constructed residential and office buildings, and cultural and art venues become accessible to the public and tourists.

3 Methodology

The processes on the border between a port and a city are some of the most difficult in modern spatial management and planning. To maintain an appealing city and its competitive capacity in a globalized world, regenerating deindustrialized port territory is inevitable and unavoidable. Therefore, in the earliest stages it is necessary to focus on the activities of various social movements, municipal authorities, and designers to permit the change required of waterfronts. We investigate factors and the phenomena that precede the regeneration of port territories in developed countries. In addition, we examine the reasons for changes in the port-city interface in developing countries oriented toward exporting raw materials rather than the service sector. It is necessary to develop methods to

Port	Regeneration	City project
Amsterdam	1986–1992	IJ-oevers
Antwerp	1999–2015	't Eilandje
Belfast	2002–2020+	Holywood Exchangue & City Quays
Barcelona	1985–2004	Port Vell & Port Olimpic
Copenhagen	1990–2023+	Sydhavnen, Nordhavnen & Ørestad
Dublin	1993–2012	Dublin Docklands
Hamburg	1995–2017	HafenCity
Helsinki	1991–2017	Ruoholahti
Genoa	1989–2010	Porto Antico
Glasgow	1989–2016	Clyde Waterfront & Clyde Gateway
Lisbon	1993–2010	Parque das Nações
Liverpool	1981–1984	Albert Dock
London	1980–1998	Docklands
Marseille	1995–2030+	Euroméditerranée
Oslo	2000–2030+	Fjordbyen
Rotterdam	2004–2030+	Kop van Zuid
Tallinn	2030+	Vanasadam

Figure 1: EU port regeneration projects (illustration: Vladimir Khalin).

consolidate all of a port's and industrial territory's participants for effective regeneration.

Empirical work included inventorying and coding documents (spatial plans and concepts, news articles, associated reports, and publications), holding an open discussion with representatives of the port's authorities and state bodies, and public surveys. Documents are constantly updated and published on the website of the non-profit Odesa Architects' Association (2019).

To identify the most appropriate strategy for developing a port-city interface in developing countries and, in particular, in the port cities of Ukraine, we conducted an in-depth analysis of twenty successful projects in major EU cities. The most typical regeneration projects in different geographical and planning conditions are presented in this article; namely, in Bilbao (at the mouth of a river), Barcelona (on the open sea), and Oslo (in a fjord). In the graphic part of the study, we propose adjusting cargo capacity to the scale of the Odesa agglomeration and we consider the long-term regeneration prospects of the Odesa port area by applying a SWOT analysis. The results of this research have been considered in academia and presented at international conferences. Part of the research was presented to experts at the World Bank by request of the Odesa city authorities and seaport (Internet 2, 2019).

4 European port regeneration projects

Regeneration of port zones in Europe involves restoring the original relations of the city and port when the port was the centre of trade and communication for residents. Marine facilities and transport, the railroad area, docks, warehouses, and factories had exclusive access to the waterfront. The situation changed in 1960, when a global transformation of marine facilities and large-capacity technologies took place. As sea vessels became larger, they required deeper waters and more extensive land and water sites. This forced ports to migrate some distance toward deeper water, to reclaim land from the sea, and to use more modern operational technologies. Key European projects on regenerating port areas in large cities show various models of converting the port-city interface (Figure 1). Many coastal cities underwent rezoning regardless of their port activities, making coastal sections off-limit to industrial facilities. For ports on rivers, enhancing sea technology meant relocating facilities downstream (Hoyle, 2000).

Many ports in large European cities operate as landlords. That is, the port administration acts as the manager of the land that borders the port's water area. It allocates sites to port operators in terms of licensing, charges fees depending on the value of sites and their location, and collects payments. As a rule, in such ports, the municipal or regional administration is involved in port administration and is part of the supervisory board. The role of the national, regional, and municipal authorities in carrying out regeneration projects is dependent in many

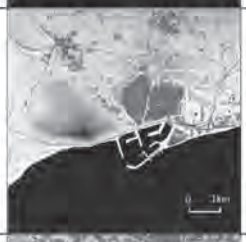
Stage	Port Vell	Period	Symbol	Characteristic
Primitive port city		Antiquity / Middle Ages to nineteenth century		*Spatial and functional connection between the city and the port. The embankment: a place of communication and commerce.*
Expansion of the port city		Nineteenth century to beginning of twentieth century		*The industrial capacity of the port continues to develop toward the sea. Linear piers for bulk cargoes are built. The city is cut off from the port by rail.*
Modern industrial port		Mid-twentieth century		*Growth of industrial production in the port. The introduction of ro-ro containers and vessels requires the separation of cargo flows and new territories and terminals. Railways and highways increasingly cut off the city.*
Retreat from the waterfront		1960–1980		*Changes in marine technology and an increase in the size of ships causes an increase in industrial berths in new bulk areas. Access to the industrial port is finally closed to city residents.*
Waterfront redevelopment		1970–1990		*The modern port consumes large tracts of land and moves toward the sea to deep waters. The old port is not deep enough and changes its functionality. Regeneration of the waterfront of the historical centre.*
Regeneration of the port city		1980–2000+		*Globalization and intermodality transform the role of the port; the interconnection of the city and the port is resumed; regeneration and redevelopment enhance the integration of the port and the city.*

Figure 2: Stages of the evolving relationship between the port and city in Barcelona (illustration: Vladimir Khalin based on Hoyle's model).

respects on the country's territorial system and the distribution of power between various levels. In several European countries, special structures have been created to aid regeneration projects within regions. To understand the various approaches, we give examples from the European regeneration of port territories and their experiences with various geographical and town-planning conditions: in Bilbao, Barcelona, and Oslo.

4.1 Bilbao Ria 2000

After the major industrial crisis of the 1980s, the Basque government, the government of the province of Biscay, and the city council of Bilbao, in cooperation with the central administration, approved the strategic plan for revitalising the city by developing environmental, transportation, and urban

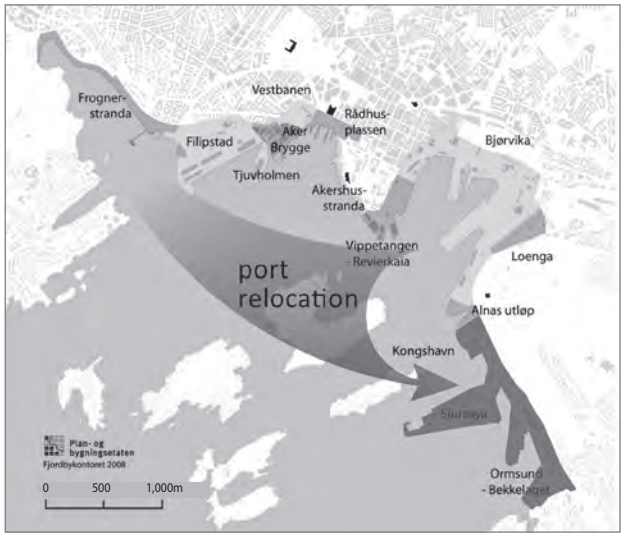


Figure 3: The Fjord City project in Oslo (source: Internet 3, 2019).

design projects. The process began in 1992 with establishing Bilbao Ria 2000 (Public Company Responsible for Urban Regeneration), an agency to mediate between the state and business providers. The program involves the combined efforts of the governments of Spain, and the Basque Country, the council of the province of Biscay, and the city councils of Bilbao and neighbouring Baracaldo. Mediation was established between the state and business. The port administration was transformed into a joint-stock company almost immediately, and so large-scale infrastructure, planning, and architectural projects became a primary instrument for modernizing Bilbao. Carrying out the port construction and the resulting redesign of the main transport corridor network have contributed to the city of Bilbao now returning to the river and its embankments.

A key point for the radical reconstruction was targeting territories along the river where regular port activities were no longer conducted. According to the plan, the river then became the centre point and focus for all new commercial and social activity. The planning included restoring the abandoned industrial enterprises and their surrounding area. The administration transferred the port territories downstream and allocated the freed-up space for social purposes. Creation of an economic structure concentrating on services, culture, and new industries represented the beginning of regenerating the urban areas. The embankments were subject to an order-planning strategy involving ecological and economic improvements. The project for renovating the port territory was named Bilbao RIA 2000. This non-profit organisation oversees and administers all interactions at all levels of the process. Bilbao Ria 2000 is responsible for coordinating and carrying out many activities integrating planning, transport, and the environment. Members of the company have developed projects with a global approach based on city planning recommendations.

4.2 Port Vell, Barcelona

As a classic example of the direct interaction of a city and a port, with many parameters similar to the port of Odesa, it is feasible to consider the reconstruction of the historical Port Vell in Barcelona. In the early 1980s, the administration of the port of Barcelona faced a choice between reconstructing the historical Port Vell to meet the modern requirements of freight processing and relocating the port's cargo capacities west of the centre, thus giving the town's residents access to the waterfront. The proposal to make the waterfront available to residents and tourists was successful, and it has profoundly influenced the city's economic development. To promote the port's area renovation, the project group established by the port set up a special management body in 1985. The fact that the city council completely cooperated with the plans for the port helped overcome bureaucratic difficulties associated with the reconstruction. The final coordination and adoption of re-planning by the government of Catalonia was finalized by the middle of 1989 (Fig. 2).

As part of extensive preparations for the 1992 Summer Olympics, the old port area was reconstructed as a walking and recreational zone. The centre and the city's northern part are off-limit to cargo terminals. The administration of the port has expanded access to the waterfront for all residents and tourists in the central part of the city, which is now regarded as an accessible urban environment where tradition merges with contemporaneity, and as a unique and favourite place in Barcelona. Over the centuries, the port of Barcelona played an active role in shaping the future city by transforming into a comfortable location for people and facilitating economic prosperity (Port de Barcelona, 2010). Barcelona used the 1992 Summer Olympics to transform the port-city interface and integrate the embankment's development with the long-term planning strategy. The experiment in renovating Port Vell shows that developing a diversified business model improved the port's competitiveness.

4.3 The Fjord City project in Oslo

A blue fjord characterizes the Norwegian capital of Oslo. Until the twentieth century, the shipyard and its structures blocked public access to the waterfront. Opinions on the gradual development of a city's waterfront at the levels of the municipal authority and port administration usually do not coincide. Coordinating official positions and specific viewpoints often takes decades. In Oslo, the negotiation process and coordinating the positions to suit everyone took place between 1982 and 2008. The port of Oslo owns the waterfront and remains the main beneficiary of economic activity, and it therefore has a vested interest in the port's activities and its development. The port's

Figure 4: Old engraving of Primorsky Boulevard (source: Internet 5, 2019).

management includes representatives of various levels of the port authority and the local municipality. Therefore, the city authorities can directly or indirectly influence the port's decisions (De Vibe et al., 2008).

Historically, Norwegians prefer naturally designed landscapes rather than industrial facilities as a symbol of the city's identity. This point became an essential factor for decision-making on the port's relocation from the city centre. On 19 January 2000, a large-scale harbour reconstruction programme called Fjord City (Norwegian: *Fjordbyen*) started. The waterfront has turned into an attractive area with housing, offices, and cultural institutions. The Oslo City Council made the decision that the port and industrial territories must be available for the city development program and become part of the city landscape. The Fjord City project is so multi-layered and complex that for its implementation the municipal authorities are using various approaches. The municipality acts as the land's owner, and the builder must comply with strict requirements of public spaces and their availability when purchasing a site. In general, a private site owner has more planning options when the city council's budget is limited. Therefore, within this scenario, the council has to implement a compulsory purchase order through a public/private partnership, implement changes within this partnership, and then transfer the ownership to the city. In this case, the infrastructure is designed at the expense of the builder and transferred to the ownership of the municipality. These requirements inflate the cost per square meter but make it possible to provide investments for social needs (i.e., schools and green zones).

The decisions resulted in regenerating Oslo's waterfront. The port of Oslo is a crucial part of a national economy that requires important internal and external commercial relations. As part of the port's relocation, Oslo transferred the container terminal to the south along the east side of the fjord. Passenger, fishing boat, sailboat, and military ship sections are integral components of the city's waterfront and create the concept of Fjord City. The modern port with new mooring depths and technologies for freight transfer will not overburden the city's infrastructure. By 2030, Oslo will receive not only a new part of the city, but also a new and modern port (Gisle Rekdal, 2013; Internet 3, 2019; Internet 4, 2019).

Today the critical problem in the changes affecting port cities is an inability to accept the requirements of port development, global practices, and urban development. According to Hoyle (1989, 2000), in recent decades the process of transforming ports has stemmed from wider and more independent trends:

- The evolution of maritime technology and considerably larger vessel sizes have contributed to extensive development of container processing methods;
- Modern cargo transportation does not use modern ports to their full capacity; and
- The reduction of port staff leads to restructuring of the urban economy.

The government gives priority to the development of transport and logistics enterprises at all levels and has preferences in decision-making when planning the city. In the world of small and medium-sized enterprises (including the media, information and communications technology, film, music, design, and tourism), forward-thinking development is key. These enterprises are the foundation of development and change in a city. The successful economic development of expanding cities in the twenty-first century depends on improving the quality of life for residents by attracting a strong concentration of diverse business sectors and educational institutions while also providing a wide array of leisure and relaxation facilities. Therefore, for cities and regions, there is a need to maintain competitiveness in the international market by maintaining national properties. The city plans places for work, housing, and relaxation, whose quality attracts the "creative class" (Florida, 2005; Peck, 2005). These knowledge-based societies then become a direct reflection of the globalization process.

Figure 5: The new pier and Primorsky Boulevard (photo: Vladimir Khalin).

5 The port-city interface in Odesa: development strategies

5.1 The study area: geographical and historical circumstances of Odesa's port development

In the nineteenth century, Odesa's position on the Black Sea turned it into a commercial and cultural frontier between the Russian Empire and the rest of the world. The city was founded on a rocky plateau that rises over fifty metres above the smooth sea. The seaport became a centre of transportation and social life, which sharply contrasted with the steep open spaces of the northern Black Sea coast. As a young city, Odesa quickly gained a solid reputation as a modern city thanks to the architectural complex of Primorsky Boulevard, which holds a prominent place in world heritage. At the beginning of the twentieth century, due to industrialization, the port gradually lost its connection with the city. Access to the port was restricted by a railway and a wooden ramp overpass. In 1927 the port limited public access, and in 1947 it was completely closed to the public. Thus, the port lost communication with the city, and residents were unable to access the 10 km long waterfront.

The estuaries that form Odesa's geography were created by shallow narrow rivers and the sea's sandpits. In 1956, Aleksey Yevgeniyevich Danchenko, the head of the Black Sea Shipping Company, introduced the idea of moving bulk cargo from Odesa to Sukhyi Lyman (literally, 'dry estuary'), which adjoins the city borders and is located 30 km from the port of Odesa. The authorities of the Ukrainian SSR supported the proposition. Thus, the port of Illichivsk (today Chornomorsk) was established as an alternative gateway. In the 1960s dredging work was carried out to deepen the bottoms of the estuaries, which made it possible to partially remove the cargo terminals and to build two larger ports: Yuzhne and Chornomorsk. Removing cargo capacities from Odesa's city centre began with the first port, at the same time as projects to regenerate industrial areas in North America. Regrettably, this was not accomplished because the Soviet planned economy was inflexible; no initiative from a private business could result in changes in city planning. At present, geographical advantages in the form of convenient estuaries for developing cargo ports show the unique opportunities for the Odesa agglomeration to become the largest transport and logistics hub in the Black Sea Basin. Eight of the total of thirteen seaports in Ukraine can be found in the Odesa region. The port of Odesa is located in the open sea gulf, three ports are in estuaries (Chornomorsk, Bilhorod-Dnistrovskyi, and Yuzhne), and the remaining four are built on rivers.

During the post-Soviet period (from the beginning of the 1990s), the following sequence of events can be observed at the port of Odesa:

- Operation of berths and terminals without specialization dictated by the needs of private business tenants of the state port;
- Abandoned areas;
- Lack of a consistent port development strategy;

Figure 6: Construction of grain terminals in the centre of Odesa (photo: Stanislav Gref).

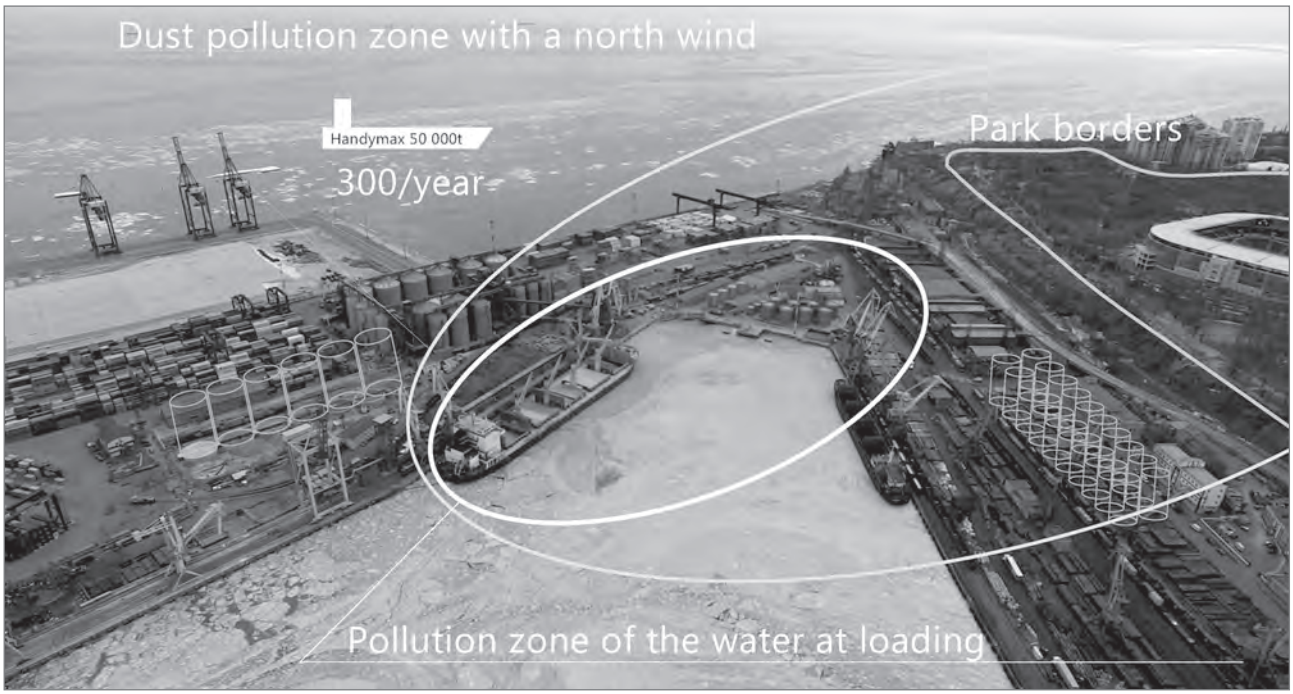


Figure 7: Dust pollution of the water area and the city when loading grain on a Handymax vessel (photo: Vladimir Khalin).

- Growth of bulk cargo terminals;
- Increasing the port area for the construction of new sites for container terminals on land reclaimed from the sea; and
- Growth of transport, the ecological burden, and noise pollution affecting the city.

5.2 Degradation of the city-port interface

In recent years, Ukraine has been actively attracting public funding for infrastructure projects. Undeniably, one often-used argument is that infrastructure development alters regional progress and economic growth. Projects implemented

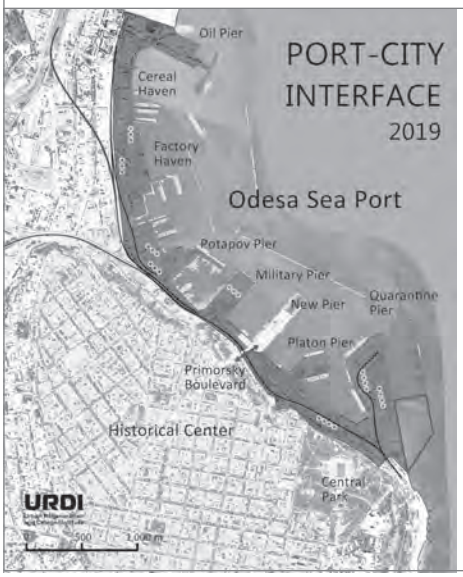
Map	Opportunities	Threats
	• Construction of new grain terminals • Construction of a new railway trestle • Cargo volume doubled • Dredging • Railroad and road overpass block pedestrian access to the embankment in the historical city centre • Pedestrian access to 10 km of the waterfront is possible only via a pedestrian overpass on the New Pier	• Degradation of the historic waterfront • Lower real estate prices around the overpass • Noise pollution and environmental pressures • Financial costs with low return • Reduced comfort and tourism appeal • Negative impact on local transport and pedestrian access

Figure 8: Assessment of the port development strategy (illustration: Vladimir Khalin and Natalie Kiely).

on the terms of a public-private partnership do not correspond to the concept of sustainable development of a city with a population of one million. Instead of removing bulk cargo from the historical centre, grain terminals are being built along the entire port waterfront. Projects for building grain terminals in the port (at present there are nine of them) will cover the entire waterfront in the city centre. (Fig. 6.). The 45-metre-high grain silos block the historical centre from the sea. Not only are environmental threats recorded in Odesa's centre in the form of protein dust carried by prevailing north-easterly winds, but architectural concepts such as the "marine facade of the city" and the "sea view" are also no longer applicable to the city.

A study of the port of Odesa operation conducted by experts of the World Bank led by Peter Bingham showed that the most active loading of ships coincides with adverse winds (Internet 2, 2019). At the same time, when justifying the need for these projects, the fact that the capacity utilization of all grain terminals in Ukraine was only 86% is not taken into account. Such figures indicate that there is no capacity shortage in the grain transhipment market. However, the grain market has high margins of return, which means that projects will continue to be implemented by participants in the raw materials business. It is expected that by the end of 2018 the growth rates of the capacities will be much faster than the growth rates of grain exports. Accordingly, loading of terminals will decrease, and by 2020 the existing surplus of capacities will grow in the grain export market. This means that projects implemented in the city's most valuable areas will not be economically feasible.

At present, world trade and outsourcing are rapidly expanding thanks to continuous improvement of the efficiency of the supply chain and its transport component. However, in addition to modern transport technologies, low prices for cargo delivery are explained by the fact that some expenses are covered by taxpayers. The following hidden costs can be attributed to port, car, and rail infrastructure: congestion in ports, air pollution, and subsequent healthcare costs. The example of Ukraine is indicative. Grain exports of about 40 million tonnes per year, the bulk of which is delivered by road transport to the Black Sea ports, results in wear and tear on roads and creates congestion in port territories. These factors should be borne in mind when designing port development programs. Considering that the development of the transport and logistics infrastructure system is not only one of the most urgent tasks in developing countries, but that it also involves tremendous risk (from a both democratic and a pragmatic point of view), the public must be attracted to and involved in the decision-making in every possible way. Sustainable development of the port city of Odesa is impossible without decentralizing the city-port system. Similar projects require the redistribution of public and private obligations to strengthen accountability. The review of development projects in the port of Odesa (Odesa Sea Port Authority, 2019) makes it possible to identify the following opportunities and threats (Figure 8).

The main role of the government and municipal authorities should not be to promote infrastructure projects lobbied for by raw material corporations. On the contrary, they should keep the project and its participants at arm's length. Thus, at each stage of the project they must evaluate whether it fulfils the purposes and requirements of the public interest and is consistent with the legislative and regulatory acts concerning protection of the environment, safety, and savings. Existing

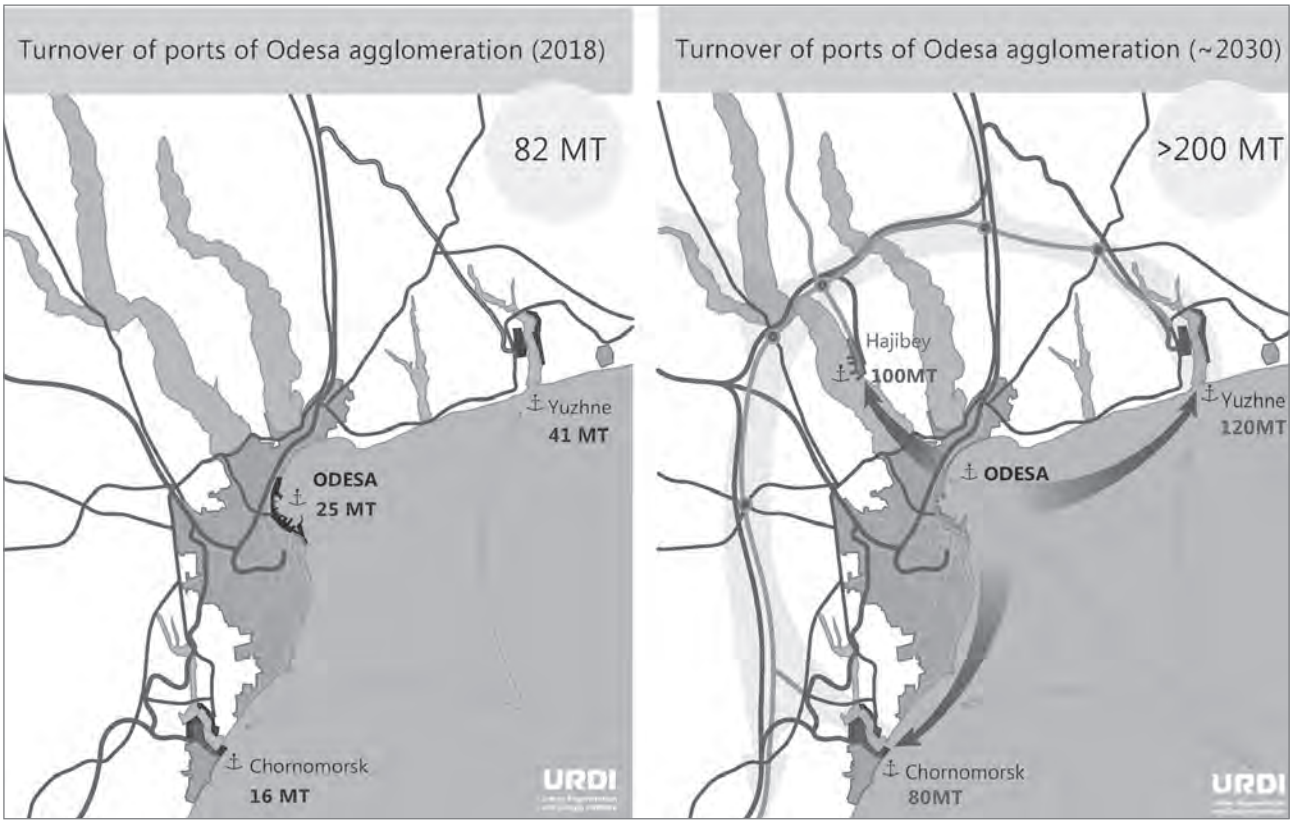


Figure 9: Transport and logistics in the structure of the Odesa agglomeration, 2018–2030+ (illustration: Vladimir Khalin and Natalie Kiely).
Note: MT = million tonnes.

concepts (Ports of Ukraine, 2019) for the further development of the port are based on bulk area expansion and do not answer a main town-planning question: how, under conditions of dense urban development, does one provide transport communications with the mainland and deep-water terminals?

5.3 Regeneration of port territories

Urban and territorial planning is one of the most important investments in the future, a prerequisite for improving the quality of life and the successful implementation of the globalization process, respecting cultural heritage and cultural diversity, and understanding and taking into account the specific needs of different groups of the population.

In reality, the abandoned and unusable areas of Ukraine's current state ports are enormous. As an indicator of the efficiency of modern port technologies, one can compare the annual turnover of goods and the length of the Rotterdam port's berth, at 477 million tonnes / 57 km. The same total indicator for all Ukrainian ports is just over one-third of that: 131 million tonnes / 40 km. Establishing sites attractive to investment for a diversified business not directly related to port activities will inject life into these valuable territories, which will lead to exponential growth of jobs and, overall, increase Ukraine's welfare. The experience of Barcelona shows that when the Vell Port was renovated, the number of jobs increased by a factor of ten. Moreover, investment in port facilities and businesses' profits have increased. City residents, non-profit organizations, and municipal authorities need to show more initiative for a qualitative change to the environment. Participatory planning and budgeting, including communities in managing the common property of cities, such as public spaces and services, can enhance spatial integration and strengthen ties, security, vitality, local democracy, and social accountability.

Comparative characteristics of the initial data for regeneration projects at the ports of Odesa and Barcelona reveal a significant difference between the orientations of ports based on goods transhipment. The main cargo in Barcelona is containers, whereas in Odesa it is bulk. The most significant advantage of the ports of the Odesa agglomeration is their geographical position, which makes it possible to transfer all cargo capacities to satellite cities on estuaries such as Yuzhne and Chornomorsk, which are suitable for building hydraulic structures without damage or loss to freight traffic.

The existing depths in the ports of Yuzhne and Chornomorsk make it possible to accommodate large vessels. The declared capabilities of the port of Yuzhne (120 million tonnes) are

Map	Opportunities	Threats
	• Freezing new grain terminal construction projects • Ban on transshipment of bulk cargo (clay, ore, chemical raw materials) • Opening of the Platon Pier for social and recreational functions • International architectural competitions for regenerating the waterfront within the boundaries of the historical centre • Modernization of terminals in the northern part of the port	• Opposition from tenants of terminals and stevedoring companies • Weak influence of municipal authorities on port authorities • Poor transport and pedestrian access • Difficulties with financing architectural competitions and design work • State ownership of infrastructure, disagreement of private businesses
	• Gradual transfer of existing transshipment capacities to the ports of Yuzhne and Chornomorsk from the Quarantine and Military piers • Connection with the Potapov and Military piers, taking into account the functioning of the railway • Development of waterfront regeneration projects • Cruise tourism development • Construction of public facilities, landscaping	• Lack of coherent central and regional government policies • Difficulties in reformatting transport infrastructure • Weak influence of institutional mechanisms on project promotion • Unpredictable political situation in the Black Sea region for the development of cruise tourism • Complications with changes in the constitutional framework
	• Regeneration of territory between the Potapov Pier and the Quarantine Pier in terms of its social and recreational functions • Modernization of the freight railway in the northern part of the port • Construction of the north–south public electric transport line • Construction of an interchange hub of a high-speed monorail near Central Park • Development of public transport for regional sea traffic	• Projects yielding sufficient financial return. Balance between commercial and public buildings • Constraints of traffic flows in the Peresyp district • Housing and private property sites along the line of the projected electric transport • Difficult geological conditions in the Central Park area • Lack of moorings in the coastal areas of the Odesa agglomeration

Figure 10: Evaluation of the project stages for the port area regeneration in Odesa (illustration: Vladimir Khalin and Natalie Kiely).

almost equal to the entire 131 million tonnes existing cargo turnover of Ukraine (2016 data). The aggregated capacity of grain terminals in Ukrainian ports (66.2 million tonnes) already exceeds the entire annual grain harvest (66 million tonnes). Considering domestic consumption of about 30 million tonnes, the surplus of grain capacities of port terminals is already twice as large as export opportunities. Therefore, the construction of new grain terminals will only lead to the intra-port competition of stevedoring companies.

Some of the first steps taken in Odesa toward transforming the port in the post-industrial period were related to the idea of setting up a tourist hub on the Black Sea coast. This would allow Odesa to become a starting point where Mediterranean cruise routes would begin or end. In these conceptual designs it was proposed that the cargo port be transferred to the Khadzhibey Estuary (Skachek & Freidlin, 2012), thus creating a transport and logistics centre in an area free from construction in the rear of the port. The relocation of the Odesa port 30 km deeper into the mainland would improve transport accessibility for cars and rail transport, reduce the impact on the landscape and the ecology of the city, and facilitate modern production near the new port outside the city. The modern port in these projects will be linked to the TEN-T trans-European transport corridors (Khalin, 2016), which corresponds to world trends in the development of a port interface.

In May 2018, the association of architects of Odesa held a panel discussion with students and teachers from Germany, and they held a roundtable forum called The Sea Cities in June. At the department of town planning of the Odesa State Academy of Civil Engineering and Architecture, every year three to four students select topics for their master's theses related to renovating port territories (Association of Architects of Odesa, 2019). An international architectural competition on the renovation of port territories, similar to a high-profile competition held in Tallinn, is necessary for meaningful feedback. Holding such a competition would position Odesa as a sustainable and democratic city. Port development or renovation projects should be integrated into regional and urban planning (Khalin, 2017). It is necessary to conduct interdisciplinary studies of the interrelation between the city and the port and to find the optimal solutions. Regeneration of port areas should be carried out step by step, taking into account the interests of all participants and maximum public benefit. Some reasonable proposals with regard to opportunities and potential risks are summarized in Figure 10.

6 Conclusion

In many cities that contain a port in their historical core, regenerating port areas begins with pressure from society, which develops into a discussion between civic organizations, the municipality, and the port administration. Such a discussion develops gradually, over ten to twenty years, and it has no significant impact on port business. It discusses the most suitable places for new terminals outside the city. Many abandoned shops and warehouses at the Odesa seaport can survive and flourish with functional changes. It is necessary to involve the city's representatives in the administration of the port, allowing it to make vital decisions in collaboration with all parties, including the local community. It is necessary to start cross-disciplinary studies. To begin with, these can be joint workshops involving students from various higher-education institutions, including those from foreign cities with experience in regenerating ports. A democratic society plays the principal role in launching institutional mechanisms for regenerating cities' waterfronts. This path has been taken by the most successful cities in the world, resulting in a high-quality landscape, diversified business, and public spaces emerging on the seafront. This appeals to the principal resource in the competitive struggle among the most prosperous twenty-first-century cities: creative people.

Exploring the successful European experience of regenerating ports in historical centres, we assume it is necessary to conduct more in-depth studies of the port-city interface in the developing countries of eastern Europe. Particularly for Ukrainian ports in large cities such as Odesa, Mykolaiv, and Kherson, we offer the following recommendations in planning and management:

- The structure of cargo flows through Ukraine's seaports reflects the real state of the country's economy, being an indicator of industrial development and the dynamics of the population's income level. In a growing post-Soviet economy, it is necessary to conduct interdisciplinary research to assess the repercussions of removing cargo terminals from historical city centres;
- The regulatory framework for port activities in Ukraine lags significantly behind the actual processes: the port's land belongs to the local government, and the port property to the national government. One way to address this issue is to create joint administrations to manage the port;
- The public should have more information about port development projects and their impact on social, environmental, economic, and cultural aspects. The public

should be able to access objective information about the costs incurred by the city and the benefits it receives from port activities;
- The municipality should conduct independent research on the long-term future of port areas and select the appropriate option for sustainable development of the city;
- State management of ports in Ukraine makes it possible to specialize ports by types of cargo. The national government needs to design a long-term strategy for developing and specializing Ukraine's ports, considering the needs of urban planning and sustainable development.

Vladimir Khalin, Odesa State Academy of Civil Engineering and Architecture, Department of Town Planning, Odesa, Ukraine
E-mail: khalin@ogasa.org.ua

Natalie Kiely, Cork, Ireland
E-mail: nataliekiely@eircom.net

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Živa Ravnikar
Barbara Goličnik Marušić

Nature-based solutions (NBS): The Connecting Nature project

The Connecting Nature project is funded by the Horizon 2020 programme: Smart and Sustainable Cities H2020-SCC-2016-2017. It uses nature-based solutions, which derive from recognizing the value of the analogy between natural processes and spatial planning. Nature-based solutions are created by comprehensive, joint design and creation processes that lead to more ecological, environmental, and social benefits. The concept has evolved from addressing questions and challenges such as the following: How can nature help the city? How can we design a space that will simultaneously provide more benefits? Examples of NBS solutions for the well-being of cities are diverse. For example, they may create elements of green infrastructure which, in addition to microclimate effects, also have the role of linking parts of cities and contributing to sustainable commuting and/or recreation. NBS solutions provide biodiversity and ecological benefits and can combine various positive effects, including energy production, sustainable waste management, promotion of social integration, public-health oriented green area planning, and so on.

Although the benefits of NBS have been recognized, the development and implementation of nature-based solutions is complex and often difficult and rather slow in practice. Implementation of NBS concepts is currently a challenge for most cities at the level of the decision-making process. Solutions require the efforts and contributions of various disciplines, because they address a number of environmental, social, and economic challenges of the society in a sustainable way. When planning solutions, planners or decision-makers often face "silo thinking": departmentalizing and compartmentalizing tasks to the extent that there is little cross-communication or cross-fertilization of ideas and solutions. The Connecting Nature project addresses the question of how to effectively integrate nature-based solutions into planning and decision-making processes.

The project includes thirty-one organizations that work together with authorities, communities, industrial partners, NGOs and experts from various fields. The partnership of sixteen European countries, Brazil, China, Korea, and the Caucasus (Georgia and Armenia) invested in a multi-million-euro, large-scale implementation of nature-based projects. The project evaluates the impact of initiatives and NBS solutions for partner cities in terms of adapting to climate change, human health and well-being, social integration, and sustainable economic development. The overarching objective of Connecting Nature is to position Europe as a global leader in the innovation and implementation of NBS in urban and social development. A knowledge framework and a database of nature-based solutions is being created through the partner cities' cooperation. Evaluating these solutions, innovations, and syntheses of different approaches and methodologies triggers a new learning process that will help other cities around the world to implement NBS in urban space.

The "front-runner" cities play an important role in the project, because they have already implemented the NBS concept in practice. They are actively working at the trans-disciplinary level, they use bottom-up planning, and they have an open and creative dialogue with different stakeholders. The front-runner cities of Genk, Glasgow, and Poznan represent examples to other "follower" cities (two groups of follower cities have formed: fast followers and multiplier cities). These cities are using participatory co-creation, cross-sectoral cooperation, and advanced technological solutions to plan and manage spatial solutions. In the project, the front-runner cities' NBS solutions are examined in detail, in order to formulate and define indicators for evaluating NBS solutions and to study, evaluate, and understand the planning processes and establish successful models of NBS financial mechanisms. The project envisages the

development of a mechanism for monitoring and evaluating the effectiveness of the implementation of NBS solutions using impact indicators (climate change adaptation and resilience, health and wellbeing, social cohesion, economic development potential, and green business opportunities) and assessment criteria (cost effectiveness, inclusivity, policy-embeddedness, and stakeholder endorsement). This mechanism will be based on the already implemented NBS solutions of front-runner cities and will be used to measure progress towards the set goals at different stages of the NBS solutions.

The front-runner cities are dealing with several different challenges in the various stages of development. To illustrate, Genk is actively involved in the project, by planning and implementing the Schansbroek project in the Stiemerbeek valley, with focused transparent insights into the process of planning and evaluating the project solutions. The area has a distinctive industrial character and exceptional cultural diversity in the population. The urbanized part of the valley contributes to water pollution, makes it more difficult to regulate the level of groundwater, and consequently is harming the biodiversity of the area. Therefore, the regeneration of the water system in the form of renaturation is a key step and challenge. A nature-based solution envisages a linear design of a multi-functional park along a water channel. In the rainy months, the area represents a protective flood buffer for the settlement, whereas in the dry period, the design elements of green and blue infrastructure offer recreation space. The area is ecologically important, so the renaturation will improve biodiversity and spatial degradation. Due to its very complex technological solutions, the Genk project will be able to search for innovative participative financing models based on Connecting Nature. In the social aspect, the nature-based solution of the Stiemerbeek

Figure 1: Water channel in the Schansbroek area (source: project homepage).

park represents a reference to other projects, because it incorporates the aspect of recreation into its design, promotes the concept of sustainable mobility, provides biodiversity, and represents an example of stakeholder involvement in the creation of a public space. It represents a way to use the diversity of the population, despite the cultural barriers, as a mean of co-creating, integrating, and ensuring social cohesion.

NBS solutions are not limited only to larger multi-functional areas. Genk is also involved in Connecting Nature with the project "Beeplan", which provides a bee-friendly city with a network of relevant bee spaces. The project involves a network of different stakeholders, which represent an example of how project develops from the initiatives and participation of individuals to effective management. Glasgow, for example, is implementing a "Stalled Spaces" project. Given the fact that a lot of the city's land is polluted, the costs of remediation of such degraded land increase the costs of constructing buildings or land consolidation. Thus, they are seeking solutions with temporary land use, which contribute to the nature-based solutions if they help improve the environment. The project allows residents to use land for temporary purposes, which brings benefits to communities and is a rational use of space. The community creates space according to the neighbourhood needs, taking into account the characteristics of the degraded land. According to this concept, Glasgow's local inhabitants have taken over 100 areas where various temporary uses are taking place, such as gardening in raised beds, urban gymnasiums, playgrounds, and artistic activities.

The Connecting Nature project in the city of Poznan addresses the effects of climate change, especially heatwaves and floods. The densely populated urban centre has impermeable urbanized floors, which limit the ability to retain moisture in dry months, creating inappropriate microclimate conditions in the city. When there is intense precipitation, the population faces floods due to poor water drainage, which has a negative impact on the quality of life itself. To improve conditions in the city, pocket parks are being planned on the abandoned, unused, and degraded areas within residential areas. These parks will connect the city with green corridors, improve microclimate conditions, provide recreation and social opportunities, and the permeable soils will relieve the rainwater burden on the drainage infrastructure.

Front-runner cities in the project are followed by partner cities looking for knowledge and experience with nature-based solutions. The Connecting Nature project aims to transfer knowl-

Figure 2: Temporary use in Glasgow (source: project homepage).

Figure 3: Pocket parks (source: project homepage).

edge from different areas and stages of the solutions.

The co-creation of spatial solutions is one of the important aspects of the NBS concept. The current activities of the Urban Planning Institute of the Republic of Slovenia (UIRS) are focused on understanding the process of co-creating open spaces, the importance of involving different stakeholders, and the advantages and disadvantages of co-creating space with users according to different stages of integration. In order to capture a comprehensive overview, in the next phases, emphasis will be placed on examining the role of government bodies and planners in the process of planning, focusing on questions of managing and coordinating the planning process, and the importance of integrated planning and various ways to participate. The UIRS developed a generative GIS web platform as a set of tools that assist the implementation of public participation in urban planning processes. The Connecting Nature project and front-runner cities will test stakeholders' interests (users, planners, state bodies) in using GIS participatory tools, what kind of results can be achieved, and how the tools can be useful in the individual phases of the process (planning, implementation, management, and monitoring). The research also focuses on these questions: How are the roles in co-creating NBS solutions taken: who moderates and leads the process? When is the process of co-creation finished? How should we measure the success or failure of NBS solutions? In addition to the questions of the integration and optimization of public participation, the UIRS's activities are also linked to the development and verification of social criteria and indicators in the process of urban planning and development involving NBS solutions. Our contribution is visible through the development of the concept of space-carrying capacity for implementing solutions in terms of space usage and sustainable use of natural resources.

Živa Ravnikar, Urbanistični inštitut Republike Slovenije
E-mail: zivar@uirs.si

Barbara Goličnik Marušić, Urbanistični inštitut Republike Slovenije
E-mail: barbara.golicnik-marusic@uirs.si

Project information and sources

Project homepage: https://connecting-nature.eu

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