2ND GENERATION HIV SURVEILLANCE IN PAKISTAN
ROUND 5

# MAPPING KEY POPULATIONS IN PAKISTAN 2015-16

OCTOBER 2016.

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# FOREWORD

The Mapping rounds followed by the integrated biological and behavioural surveillance (IBBS) rounds in the country have been instrumental in providing policy makers, program planners and implementers with up-to-date epidemiological evidence to steer the HIV response in the direction of maximum impact. In resource constraint settings evidence based targeted approaches, contextually tailored to the needs of the infected and affected populations are required to efficiently deliver services and curb the spread of infection. The mapping of key populations has been complimented by Asian Epidemic Modelling exercises for obtaining population size estimations and also to develop high impact intervention scenarios based on best practices for efficient and effective use of resources.

The IBBS Round 5 was successfully conducted by the National AIDS Control Program (NACP) under stewardship of the Ministry of National Health Services, Regulations and Coordination (Mo NHSRC), Government of Pakistan. The Ministry lauds the untiring efforts of the technical and implementing partners in carrying out this tedious exercise with high degree of professionalism, zeal and enthusiasm. The Mo NHSRC appreciates Dr. Mamadou L Sakho UNAIDS Country Director for Pakistan and Afghanistan for his continuous support, technical advice and operational guidance in conducting the field activities. Funding support from the Global Fund and UNAIDS is sincerely acknowledged in carrying out this activity of utmost national importance. The support of development partners, including, UNICEF and UNFPA is also deeply acknowledged.

The Ministry of National Health Services, Regulation & Coordination takes the opportunity to appreciate the dynamic leadership of Dr. Abdul Baseer Khan Achakzai, National Program Manager, NACP for the successful completion of mapping of key populations in the country. The interest and active role played by Dr. Achakzai and his team including Dr. Sofia Furqan, Dr. Quaid Saeed and Dr. Saima Paracha in the planning, implementation and monitoring of surveillance activities are greatly acknowledged.

The Mo NHSRC is also grateful to the non-governmental organizations, community representatives and members of the key populations who took part in the survey and rendered valuable inputs in terms of time and efforts.

The Mo NHSRC hopes that the data obtained from the mapping would be intelligently used by the policy makers, program managers and public health specialists to target the interventions where the epidemic is concentrated to yield value for money and control the spread of the epidemic.

Dr. Assad Hafeez
Director General (Health)
Ministry of National Health Services, Regulations & Coordination
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# ACKNOWLEDGMENTS

The Integrated Behavioural and Biological Survey (IBBS Round V) conducted in 2016-17 was a landmark achievement for Pakistan that provided real time epidemiological evidence of the HIV AIDS behaviourial, incidence and prevalence trends in the country. The information will serve to guide the policy makers and programmers to devise precision-targeted, high impact, population specific, cost effective strategies to curb and control the spread of HIV in the country.

Mapping is an important phase of field activities that contributes to the IBBS process by generating relevant data on numbers and hotspots of key populations' activities that provides reliable population size estimates and projections for future program planning at the national and sub-national levels. UNAIDS commends the efforts of the Technical Working Group particularly, focal persons from UNICEF, WHO and UNFPA, as members of think tank of HIV experts for their valuable inputs in steering this exhaustive process of National scale geographic mapping conducted in 23 big cities of the country with sound planning, coordination, implementation and monitoring.

UNAIDS takes the opportunity to laud the leadership and stewardship of NACP for the successful completion of the mapping round in the country. Dr. Abdul Baseer Khan Achakzai and his team including Dr. Sofia furqan, Dr. Quaid Saeed and Dr. Saima Paracha provided valuable inputs and timely guidance to the field teams, implementing and technical units to efficiently complete the process.

UNIADS appreciates the support of UNICEF, UNFPA, Global Fund and other partner organizations in making the surveillance round a success. The hard work and efforts of Bridge Consultants, Bahria University and University of Manitoba is acknowledged in successfully conducting the mapping phase of the R-5 and tactfully handling the challenging scenarios at various stages of the project. UNAIDS expresses gratitude to the Pakistan Health Research Council (PHRC) for providing a professional review of the study protocol and granting ethical approval to carry out the study.

UNAIDS would also like to thank the field teams, community leaders and members as well as respondents involved in various stages of the mapping for their time, to respond to the lengthy questionnaires with great patience and facilitate the overall process.

UNAIDS hopes that the mapping report will help to geographically prioritize and implement contextually appropriate, evidence based, focused, targeted, high impact interventions to control the spread of HIV epidemic in the country.

Dr. Mamadou L Sakho
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# EXECUTIVE SUMMARY

Programmatic mapping is the systematic identification of locations where key populations congregate and estimation of their size. Mapping is largely based on a geographic approach, supplemented by mapping of network operators of female sex worker (FSW). While geographical mapping emphasizes on locations and spots where key population members congregate, network mapping focussed on the promoters and mediators of sex work and mapped networks through which female sex workers operate. Virtual Mapping mapped web based sites and applications used by MSMs to seek sexual and social links. Although the exercise followed previous mapping studies and was used in a similar approach, a few variations need to be noted. Hijra Sex Workers were replaced by Transgender population, while rather than mapping Male sex workers only, a broader category of MSM was mapped. The case definitions and population parameters for FSWs and PWIDs remain unchanged.

The overall objective of this mapping study was to update population size estimates of selected key populations (PWID, FSWs, MSM & TGs) to create evidence for developing action plans for HIV prevention interventions in Pakistan. A total number of 23 cities/towns were selected for Mapping. This included 13 cities in the Punjab province, 6 in Sindh Province and 2 cities each in KPK and Baluchistan provinces. A total number of 17,389 L1 interviews were conducted through interviewing Secondary KIs across the 23 cities mapped. While L1 focused on gathering information on 'hotspots' and places where risk activities take place, 'Level Two' consisted of validating this information, through visiting "hot spots", and interviewing members of key populations present at those spots. This process, called 'spot profiling' or L2 interviews, involved primary key informants (key population members and those closely related, including FSWs, MSM, pimps, madams, brokers, etc.), and focused on validating the information collected and collated in the L1 exercise. A total number of 13,209 L2 interviews were conducted as part of the geo-mapping approach. An additional 1100 interviews were conducted with network operators (FSW pimps) around the country to inquire about the girls who work through sexual networks managed by pimps and network operators.

The National AIDS control program (Ministry of National Health services and regulations) along with the Provincial AIDS control Programs were responsible for the effective implementation of the surveillance round in close consultation and coordination with UNAIDS, GFATM and all other UN agencies. The overall coordination support was provided by UNAIDS Country Program in Pakistan in partnership with the GFATM office. Field implementation and data collection was done through a consortium of multiple partners with a rich technical background in the field of second generation HIV surveillance, selected through a competitive process, using international procurement guidelines. The selected organizations, Bridge Consulting Services and Bahria

University Islamabad were trained on the protocol and research procedures for the entire field implementation and data collection by the Centre for Global Public Health (CGPH), University of Manitoba, Canada and its local technical team in Pakistan, which provided technical support to this study. A monitoring system was developed to track the progress of the study as well as ensure that quality surveillance data was collected. A field monitoring team was hired by NACP in consultation with the Provincial AIDS Control Programs which vigilantly tracked the operations of Mapping and IBBS activities and provided regular feedback to NACP and the technical working group.

Following are the results of this study:

### People who inject drugs (PWID):

Mapping of PWID was conducted in only 14 cities in Pakistan. A few major cities in Punjab, which included Lahore, Faisalabad, Sargodha, Multan etc., were not included in this study. Thus results of this study, specifically for Punjab, should be extrapolated with caution, as some of the major cities where high prevalence of drug injecting is not included. The mapping study estimated 37,137 (range; 31,138 to 41,752) people who inject drugs spread over 7401 spots in 14 cities of Pakistan. Of the total estimated number of PWID mapped, almost two thirds were reported from Karachi, Bahawalpur reported the second highest estimated number of PWID, and the third largest estimate was reported from Hyderabad. A very insignificant number of Female PWID were reported in the mapping exercise; only 44 female PWID were reported from 19 spots, giving it an average of 2.1 female PWID per spot. The highest numbers of spots were street based, where 81% of the PWID congregate. Street based spots mainly comprised of public places, on the street, in parks, vacant grounds, under bridges, outside shops, near markets, at public transportation location. Cemeteries or abandoned buildings were the second most frequented spot, reported by 9% of the PWID. Private residence/homes made only 4% of the spots for PWID, thus home based PWID remains a very small proportion of the overall PWIDs in Pakistan. The mapping process revealed a wide variation in spot sizes by city. The largest spots were reported in Mirpurkhas and Larkana at approximately 9 and 8 PWID per spot respectively, showing larger networks of PWIDs. Jhelum, Bannu and Rawalpindi had the smallest spot sizes at approximately 3 PWID per spot. Among those PWIDs who inject at more than one spot, the average number of spots that each PWID injects at was reported to be 1.7 spots. Most of the spots were reported to have cyclic timing, usually 2 to 3 times a day (in the morning, evening and night) when PWID visit these spots, congregate and inject drugs

### Female Sex workers (FSWs)

Mapping of FSWs was also conducted in 18 cities in Pakistan, and a few cities in Punjab, were not included in this study. Female sex workers (FSWs) form one the largest key populations with an

average estimated number of 64,829 (range 70,428 to 57,734) SWs spread over 4,514 spots in the 18 cities mapped. Karachi has the highest number of FSWs (avg=25,191) which made 39% of the total sex workers in the cities mapped. Karachi was followed by Sheikhupura (avg=6,252) and Bahawalpur (avg=6,201). A number of operational typologies were defined based on the way sex workers operate and interact with their clients and peers. The main typologies reported in the course of this mapping exercise were KK based (20,964 to 24,170; 36%), followed by residence or home based (17,272 to 20,726; 29%), cell phone based (9,303 to 12,181; 17%) and street based FSWs (7,901 to 10,347). In addition, hotel/massage based sex workers (1,567 to 2,052) distributed over 300 massage parlors/hotels; FSWs operating at various brothels (727 to 952) were also seen. The distribution of sex work has strong implications on prevention programs providing evidence on where prevention programs should focus.

Network mapping, maps various network operators (pimps, aunties, madams) in a city, using the same principles of geo-mapping. More than 1100 interviews were conducted with NWOs around the country to inquire about the number of girls each NWO works with and the number of Kothi khana's they manage. More than 1000 kothikhana's were visited and information was gathered to understand the dynamics of this SW typology and use this information to develop estimates for KK based FSWs. Results showed that an average number of 6 girls are reported to work with a network operator with an average number of 2.7 home based and 3.3 KK based FSWs working with each NWO. While weekends (Friday, Saturday and Sunday also) are the peak days of operation for spots (especially street based, kk based, brothels, establishments etc.,), evenings were the timings where most FSWs would visit spots.

### Transgender Populations

Size estimate for Transgender population was obtained through adopting the geographical approach whereby all geographical locations where TGs could congregate were mapped. The average number of TGs estimated in the 23 cities mapped were 31,790 ranging between 26,804 to 36,776 at 9,820 spots. Of the 23 cities in Pakistan, four of the cities had the major concentration of TGs, forming more than 60% of the total estimated number TGs in Pakistan. These cities included Karachi (9,123), Lahore, (3,936), Multan (3,130) and Faisalabad (2,737).

Of the total 9,820 spots identified through this mapping, 4,341 were spots at the streets/open spaces, which formed the largest typology of spots and an estimated number of 31,790 TGs operate through such spots. This was followed by 3,031 Deras mapped with an estimated number of 10,956 TGs. Approximately 6,625 TGs were mapped from 1,798 residential spots. The overall spot size was reported to be small, with 3.2 TGs on an average operating from each spot. City wide analysis showed the largest spot sizes to be seen in Larkana (6.0), Quetta and Turbat (5.9) and Sargodha (5.7), while the smallest ones were reported for Multan (1.9), Bannu (2.2), Mir Pur Khas (2.3) and Gujrat (2.4).

TGs were found to be more mobile as compared to other KPs and use multiple spots. Moreover, there are chances of duplication, because TGs could be living in a dera, and could be counted at street spots as well. To adjust for this duplications (i.e., TGs using more than one spot and thus to eliminate issues of double counting of same TG at different spots) TGs were inquired for how many spots they would usually go to. Almost all TGs from Hyderabad (94.1%) and Mir Pur Khas (94.0%), followed by 90% of TGs from Multan reported using more than one spot to solicit clients. Further analyses shows that TGs in Mirpur Khas and Gujrat reported using 4.7 and 4.6 spots respectively, which was a lot higher than the average number of spots frequented overall.

Although a large proportion of TGs are involved in sex work, NOT ALL TGs sell sex. A little more than 80% of all TGs in Pakistan were reported to sell sex, while in some of the cities mapped almost all TGs are involved in sex work.

### Men who have sex with men (MSM)

Two parallel approaches were used for estimating the total number of MSM in Pakistan: Geographical and virtual mapping. Geographic mapping (Geo-mapping) approach used was similar to the geographical approach used for other Key populations, while virtual mapping was done by identifying all websites and mobile applications where MSM connect with each and estimating their size.

In all cities mapped, this study was able to identify a total number of 8,606 geographical spots where an average number of 46,264 (ranging between 39,273 and 53,257) MSM congregate. Karachi reported the largest spot sizes and MSM estimates among the 23 cities mapped with an average number of 18,361 MSM mapped at 3,495 spots. The second largest MSM estimates were identified for Lahore (average of 5,471) followed by Multan (average of 4,265). The overall number of MSM could be much more than what are estimated by this study, which can be due to reduced visibility owing to the overall stigma and discrimination experienced by this key population. The largest proportion of MSM operate through street spots, which form approx. 63% of all geo-spots identified. The second largest typology was Game clubs/ Net cafés with 1327 spots identified that accounted for about 14% of the total spots mapped Hotels and guest houses were the third largest typology of MSM spots (approx 8%) mapped. The majority of hotel and guest house MSM spots were reported from Karachi, Quetta, Sukkhur and Multan. Results show that on usual days (normal week days, non festival days etc.,) the estimated number of MSM are 27% lesser than the numbers which are reported on peak days (weekends, salary days, festivals etc.,) This trend of higher numbers of MSM on each spot on peak days was noticed among all cities mapped, however, the proportion of increase comparative to usual days varied by city.

It is important to recognize that the term "Male Sex Workers – MSWs" is different from MSMs (men who have sex with men). MSWs include males who provide sexual services i.e. anal or oral, to other males in return for money or other financial benefits. The numbers suggest, that the predominant proportion of MSM that are present at geographical spots mapped were Male sex workers (approximately 85%). The cities with the least proportion of the MSM mapped who were Male sex workers were Sialkot, Dera Ghazi Khan and Sheikhupura. On the other hand more than 95% of the MSM mapped informed that they would sell anal sex for money to clients. Some of these cities included Bahawalpur, Hyderabad, Larkana, Multan, Nawabshah, Sukkhur etc., In both mega cities i.e., Karachi and Lahore, approx. 3/4$^{th}$ of the MSM mapped all sell sex to clients.

In addition to the geo-spot based MSM, another 27,986 MSM were estimated using virtual mapping. The highest number of MSM who use internet to look for other MSM were estimated in Karachi (10,404), followed by Lahore (5,232) and Rawalpindi (4,258). It was also noted that a higher proportion of MSM in larger cities (e..g, Lahore and Karachi ) used multiple MSM related websites to seek for MSM partnerships, in contrast to smaller cites and towns, where comparatively smaller proportion of MSM used multiple websites. On the other hand, MSM in bigger cities reported having more than one identity on a single website. Among various internet websites used, Facebook, Grinder and Pal Jam/Man Jam are the most utilized websites as reported by the respondents.

## Conclusions

As part of utilization of the results, the knowledge gained from this study could be used to develop MACRO-PLANS, to strategize target cities and towns where provision of services would be most effective and cost beneficial. Thus, services should be targeted in cities with highest numbers in each province to reach coverage levels of 80% to 90%. Within cities, mapping data helped identify spots and locations, where risk of HIV transmission is the highest and can help guide the development of a MICRO-PLAN to set up services. The study has also provided an impetus for further research. There is a need to further explore web based MSM and innovative ways are needed to extend prevention services to this hidden segment of the population. It is difficult to fully comprehend the extent and organizational dimensions of this specific group, without a long term engagement and sustained prevention response. While efforts need to be focused on learning more about the epidemic and its driving forces, scaling-up of the current national HIV/AIDS response should be the key objective to contain HIV at its present level.

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# 1. INTRODUCTION

## 1.1 Background

Apart from other interventions surveillance has always remained a major focus of National response to HIV/AIDS in Pakistan. During the early phase of the epidemic, surveillance data was drawn from a network of HIV/AIDS surveillance centers, where HIV diagnostic facilities were provided, and confirmed HIV/AIDS cases were regularly reported to respective provincial AIDS Programs and eventually shared at a National level.[1] Till the launch of Enhanced HIV/AIDS Control Program most of the surveillance efforts were concentrated on tracking AIDS cases or the spread of the HIV virus itself. Applying the latest advances in the field of HIV/AIDS surveillance, the Enhanced program envisaged the need of Second Generation HIV/AIDS surveillance, which does not only capture the sero-prevalence trends but also the underlying risk behaviors which actually determine the course of epidemic in a given population.[2] The Canada Pakistan HIV/AIDS surveillance project (HASP) was launched in 2004, and was a critical part of the Enhanced HIV AIDS control program since 2011. Since its inception, HASP relayed timely and relevant information to the National and Provincial AIDS Control Programs (NACP/PACPs) in Pakistan, by collecting serial data from key vulnerable populations using a scientific methodological approach. Since 2011, HASP conducted four surveillance rounds and generated a wealth of information on key populations and recent trends in the HIV epidemic in Pakistan.[3]

This mapping of ***"key populations"*** was conducted as part of the 5th round of Second generation surveillance in Pakistan. Key populations (KPs) in the HIV epidemic are defined by UNAIDS as ***"groups at higher risk of HIV acquisition and transmission as compared to the general population".*** Although various countries may have additional country specific key populations, Female Sex workers (FSW), men who have sex with men (MSM) and people who Inject Drugs (PWIDS) are universally categorized as key populations. KPs play a key role in the way HIV spreads, and their involvement is vital for an effective and sustainable response to HIV.

As in the previous rounds, this round aims at conducting a comprehensive assessment of the size, sociodemographic characteristics, behaviors and HIV prevalence in groups who are at

[1] NACP 2004. AIDS/HIV Surveillance Reports. National AIDS Control Programme. Ministry of Health. Islamabad. Pakistan

[2] WHO/UNAIDS 2000. *Second generation Surveillance for HIV/AIDS: the next decade.* World Health Organization/Joint United Nations Programme on HIV/AIDS, Geneva.

[3] Adrien A, Thompson LH, Archibald CP, et al. Translating knowledge from Pakistan's second generation surveillance system to other global contexts *Sex Transm Infect* Published Online First:19 December 2012 doi:10.1136/sextrans-2012-050774

higher risk of HIV and form an important part of the transmission networks through which HIV epidemics can emerge. This report focuses on a rapid mapping assessment to estimate the size, typology and locations of these key populations. Mapping is followed by a behavioral and biological survey to better understand the socio-demographic and behavioral characteristics of key populations and assess the current HIV prevalence in these groups.

## 1.2 The Epidemiology of HIV in Pakistan[4]

The HIV epidemic in Pakistan is highly heterogeneous with substantial diversity in the transmission dynamics at the provincial, district and local levels. In addition, social, demographic and economic changes in Pakistan create dynamism in the trajectory and proximate drivers of the epidemic. Together, the regional and temporal changes make the challenge of selecting, targeting and scaling up the appropriate program strategies and tactics highly complex. In Pakistan, the estimated prevalence of HIV among the general population is less than 0.1%. Like many other Asian epidemics, the HIV epidemic in Pakistan is following a comparable trend. Surveillance results clearly indicate that the epidemic has become established among certain key populations, thus shifting Pakistan from an initially '***low prevalence - high risk' category to a 'concentrated' epidemic.*** An epidemic is classified as "*concentrated*" if effective HIV prevention among clearly identified sub-populations who are most at risk for HIV (e.g. sex workers, IDU, high risk MSM) will halt, reverse and control the epidemic. The HIV epidemic in Pakistan is concentrated among People Who Inject Drugs (PWID) and Sex Workers (SWs), with substantial diversity in the transmission dynamics at the provincial, district and local levels. In addition, social, demographic and economic changes in Pakistan create dynamism in the trajectory and proximate drivers of the epidemic.

Despite various preventive efforts, HIV infection rates among People who injecting Drugs (PWID) have steadily increased from 10.8% in 2005 to 37.8% in 2011. The 4$^{th}$ SGS round conducted in 2011 estimated around 46, 351 Injecting Drug Users (IDUs) in Pakistan spread over 19 cities. Whereas, a total number of 19,119 Male Sex Workers (MSWs) and 23,317 Hijra Sex Workers (HSWs) were approximated in 14 cities during the survey. By following geographical and network mapping, 89,178 Female Sex Workers (FSWs) were suggested in 15 cities. Among Male Sex Workers (MSWs), the overall HIV prevalence remains low at 3.1% but is concentrated (5.9%) in Karachi City. Whereas, around 7.2% HIV prevalence was reported among Hijra Sex Workers (HSWs), which is an established epidemic as compared to MSMs and FSWs. Larkana and Karachi

[4] National AIDS Control Program (NACP). HIV second generation surveillance in Pakistan: national report round IV. Islamabad, Pakistan: NACP, 2012.

cities had the highest HIV prevalence among HSWs around 15% and 12.3% respectively. As compared to other key populations, FSWs had the lowest prevalence (0.8%) of HIV Infection.

## 1.3 Why Mapping?

The UNAIDS practical guidelines for intensifying HIV Prevention recommend that program planners use strategic information to define key populations and risk settings, and then match prevention measures according to their epidemic scenario for strategic allocation of resources and placement of interventions.[5] This is consistent with a 'Program Science' approach, which systematically applies "theoretical and empirical scientific knowledge to improve the design, implementation and evaluation of public health programs."[6] From a service/program planning perspective, it is essential to first quantify the size of key populations, understand their subtypes, and identify locations where they can be found. To be able to effectively implement key population interventions, information on the key population sizes, extent and HIV risk profiles as well as their congregation sites are needed.

In order to understand the dynamics of these population, various techniques have been employed in the literature, example e.g. rapid situational assessments, participatory appraisals, and ethnographic studies.[7,8] Unfortunately, these research methods (although helpful for gathering particular information) are unable to provide reliable size estimates, whereas methodologies that estimate population sizes (census and enumeration, nomination techniques, multiplier methods, capture recapture, etc.) do not adequately describe the distribution and locations of populations in a geographical context, which is required for effective service planning.[9] The proposed methodology aims to marry elements of these approaches in order to both describe the key populations in question, as well as situate them in space. The approach proposed for this study, takes the form of a geographical/programmatic mapping, which gathers data from members of these populations—primarily in publicly-accessible locations—about their number, the venues wherein they gather, and their typologies (sub-groupings) to understand the dynamics of each population. The locations to be mapped include both geographic *and* virtual spaces (social networking websites, online message boards, etc.).

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[5] UNAIDS (2010). *Guidelines for intensifying HIV Prevention*. UNAIDS Geneva, Switzerland.
[6] http://umanitoba.ca/faculties/medicine/units/community_health_sciences/departmental_units/cgph/cgph_sci_concept.html
[7] Mack et al. (2005). *Qualitative Research Methods: A Data Collector's Field Guide*. FHI 360.
[8] Cornwalla & Jewkes (1995). What is participatory research? *Soc Sci & Med* 41(12): 1667-1676.
[9] Pisani E. (2003). *Estimating the size of populations at risk for HIV: issues and methods*. FHI 2003.

Based on this scenario, it is important to conduct a mapping and size estimation study of key populations including Female Sex Workers (FSW), Men having sex with men (MSM) Transgender populations (TGs) and People who inject drugs (PWID) in Pakistan to integrate these groups efficiently in the provision of HIV services based on their local needs. Over the past few years Pakistan has become exemplary in the collection of surveillance data including mapping information and have an appreciable knowledge of which key populations exist and their estimated numbers. Since these populations are dynamic and keep shifting, there is a need to regularly update this information, which is the major objective of this mapping study.

## 1.4 The Overall approach

Programmatic mapping is the systematic identification of the locations of public sites where key populations congregate and estimation of their size. The term "programmatic" is used to indicate that the mapping is done in order to improve program coverage among key populations. The purpose of programmatic mapping is to provide information on the size and distribution of key populations that will be the focus of specific HIV programs and services designed to provide a comprehensive “intervention package” with high coverage and sufficient intensity.

The methods used for programmatic mapping involves a direct enumeration method based on defined geographic locations and other spaces where the most at risk KPs can be encountered and reached. The objective is to obtain an exhaustive list of the locations and spaces where KPs congregate or social and sexual networks converge, and to estimate the total size of the KP at each of these locations. The methodology used involves extensive fieldwork, involving local teams and involving KP community members. These local teams segment geographic areas into small zones and then conduct systematic interviews with key informants who might be knowledgeable of the locations and spaces where KPs congregate and can be reached. For each location an estimated size of the KP is made, and the total estimate for a zone, city or state is then an aggregate of the estimates from all locations. Information collected at the KP locations is used to estimate the KP size at the location, and also to assess the amount of overlap between locations (since KPs often visit more than one) so that population size estimates can be adjusted for potential duplication. The product of the programmatic mapping is a zone-wise estimate of KPs, with aggregated estimates at the town/city level.

# 2. STUDY OBJECTIVES

*The overall objective of this mapping study is to update population size estimates of selected key populations (PWID, FSWs, MSM & TGs) to create evidence for developing action plans for HIV prevention interventions in Pakistan*

Following were the specific objectives of this study:

- To identify and map key geographical locations/areas where Key populations including Female Sex Workers (FSWs), Men who have Sex with Men (MSM), Transgender populations (TGs) and People who Inject Drugs (PWID) in the cities/towns selected for the exercise
- To estimate the size of key populations in the cities/towns selected for the exercise.
- To describe the characteristics, typologies and operational characteristics of each key population in the cities/towns selected for the exercise
- To develop capacities of the key implementers to plan, implement and monitor geographical mapping studies in country
- To promote appropriate policy and programs of HIV response through dissemination and knowledge translation

# 3. METHODOLOGY

## 3.1 Overall approach

The mapping study is largely based on a geographic approach, supplemented by mapping of network operators of female sex worker (FSW). In addition, Virtual Mapping, a new approach to map MSMs who connect with other MSM through internet and mobile phone applications is also added to this year's mapping study. While geographical mapping emphasizes on locations and spots where key population members congregate, network mapping focussed on the promoters and mediators of sex work and mapped networks through which female sex workers operate. Even for network mapping, our approach focussed on identifying network operators in specific locations, and describing the operational characteristics of the sexual networks there (i.e. how and where FSWs meet clients/partners, and where sexual transactions occur). Virtual Mapping has been incorporated to map web based sites and applications used by MSMs to seek sexual and social links.

Since this exercise follows the previous mapping studies and used a similar approach, a few variations need to be noted. Hijra Sex Workers were replaced by Transgender population, while rather than mapping Male sex workers only, a broader category of MSM was mapped. The case definitions and population parameters for FSWs and PWIDs remain unchanged.

## 3.2 Study sites and populations

The following populations were prioritized for mapping and assessment, recognizing that there can be significant overlaps between them:

- Female sex workers (FSWs)
- Men who have sex with men (MSM), including male sex workers
- People who Inject drugs (PWID)
- Transgender populations

Following were the case definitions for different key populations:

### 3.2.1 Female Sex Workers (FSW)

Any female who exchanges sexual activity with a man in return for money or benefits, irrespective of site of operation (e.g. street, bars, home, hotel, etc.).

### 3.2.2 Men having sex with men (MSM)

Any male who has sex with other men as a matter of preference or practice, regardless of their sexual identity or sexual orientation, and irrespective of whether or not they also have sex with women. The proposed definition focuses on 'high-risk' as hotspots or locations (including virtually) where MSM find casual—including paid and anonymous—sexual partners.

### 3.2.3 People who inject drugs (PWID)

People who inject drugs were defined as —men or women who are currently injecting drugs, regularly for non therapeutic purposes. Those who self injected medicines for medical purposes were excluded.

### 3.2.4 Transgender populations

The Transgender populations were defined as, "individuals whose gender identity and/or expression of their gender differ from social norms related to their gender of birth". Transgender sex workers were defined as, "Individuals who identify themselves as transgendered and receive money or goods in exchange for sexual services, either regularly or occasionally".

## 3.3 Study sites and populations

A total number of 23 cities/towns were selected for Mapping. This included 13 cities in the Punjab province, 6 in Sindh Province and 2 cities each in KPK and Baluchistan provinces.

The sites were chosen based on prior evidence available from surveillance, programmatic data indicating high risk activity, the presence of multiple key populations, as well as the geographical accessibility of the area. The selection of cities was led by the provincial AIDS control programs in each of the province, and were finalized through a broad national consultative process. This consultative process involved all stakeholders including National and Provincial AIDS Control Programs, the Technical Working Group (TWGs), University of Manitoba and UN agencies.

Table 3.1 shows the names of cities along with the groups mapped.

**Table 3.1 Sites and vulnerable populations selected for Mapping, 2016.**

| PROVINCE | CITY | PWIDs | FSWs | MSWs | TGs |
|---|---|---|---|---|---|
| PUNJAB | Lahore | | | ✓ | ✓ |
| | Faisalabad | | | ✓ | ✓ |
| | Sargodha | | | ✓ | ✓ |
| | Multan | | | ✓ | ✓ |
| | Rawalpindi | | ✓ | ✓ | ✓ |
| | DG Khan | | ✓ | ✓ | ✓ |
| | Gujrat | | ✓ | ✓ | ✓ |
| | Gujranwala | | ✓ | ✓ | ✓ |
| | Bahawalpur | ✓ | ✓ | ✓ | ✓ |
| | Jhelum | ✓ | ✓ | ✓ | ✓ |
| | Kasur | ✓ | ✓ | ✓ | ✓ |
| | Sheikhupura | | ✓ | ✓ | ✓ |
| | Sialkot | | ✓ | ✓ | ✓ |
| SIND | Karachi | ✓ | ✓ | ✓ | ✓ |
| | Hyderabad | ✓ | ✓ | ✓ | ✓ |
| | Sukkur | ✓ | ✓ | ✓ | ✓ |
| | Larkana | ✓ | ✓ | ✓ | ✓ |
| | Nawabshah | ✓ | ✓ | ✓ | ✓ |
| | Mir Pur khas | ✓ | ✓ | ✓ | ✓ |
| KHYBER PUKHTUN KHWA | Peshawar | ✓ | ✓ | ✓ | ✓ |
| | Bannu | ✓ | ✓ | ✓ | ✓ |
| BALOCHISTAN | Quetta | ✓ | ✓ | ✓ | ✓ |
| | Turbat | ✓ | ✓ | ✓ | ✓ |

## 3.4 Project Implementation and Field Teams

### 3.4.1 Overall implementation

The National AIDS control program (Ministry of National Health services and regulations) along with the Provincial AIDS control Programs were responsible for the effective implementation of the surveillance round in close consultation and coordination with UNAIDS, GFATM and all other UN agencies. The overall coordination support was provided by UNAIDS Country Program in Pakistan in partnership with the GFATM office.

Field implementation and data collection was done through a consortium of multiple partners with a rich technical background in the field of second generation HIV surveillance. These institutions were selected through a competitive process, using international procurement guidelines. The selected organizations, Bridge Consulting Services and Bahria University Islamabad were trained on the protocol and research procedures and were responsible for the entire field implementation and data collection. Data collection teams (comprising of interviewers, mobilizers and field supervisors) were hired in each city. Field teams were hired prioritizing those field workers with previous experience of working with Key Populations (KPs) and mapping, however, the efficiency and honesty of individuals was also a key selection criterion.

### 3.4.2 Technical Support – University of Manitoba

Technical support to this study was provided by the Centre for Global Public Health (CGPH), University of Manitoba, Canada and its local technical team in Pakistan. The UM's Centre for Global Public Health focuses on scientific approaches to policy development and program implementation and has extensive global experience in research, policy development and program implementation for HIV prevention. The U of M has developed methods and has conducted epidemic appraisals including mapping and surveillance in several countries in Asia, Africa and South America. UM has been working in Pakistan since 2004 and was the led technical support for the development of the overall second generation surveillance system in Pakistan.

The technical support from the University of Manitoba included:

- Protocol Development and pursuing approval from an Ethical Review Board within Pakistan
- Finalization of questionnaires and implementation procedures for SGS
- Training of field teams in mapping and IBBS procedures and development of field process for the data collection
- Development of data bases for Data management
- Integration of Biological and Behavioral data
- Data analysis of both Mapping and IBBS data
- Development of Mapping and IBBS reports

### 3.4.3 The Technical Working Group

In addition to the technical support provided by the UM, a Technical Working Group was set up to oversee the execution of the research study. The Technical Working Group consisted of members from UNAIDS and UN bodies, NACP, PACP representatives, GFATM office in Pakistan, local technical experts and local stakeholders (government, donors and non-governmental partners) and technical team members from the University of Manitoba's team. The roles of the Technical Advisory Group were to:

- Provide input to the development of the protocol and instruments for the study
- Facilitate the study's implementation by developing linkages with partner agencies and other stakeholders
- Help orient the research team about research protocol and tools
- Guide the research team on planning, managing, and assuring the quality of data collection
- Monitor the technical aspects of field work
- Assist with report-writing and dissemination
- Oversee the application of mapping findings to the development of new-and improvement of existing-prevention programs and services for key populations.

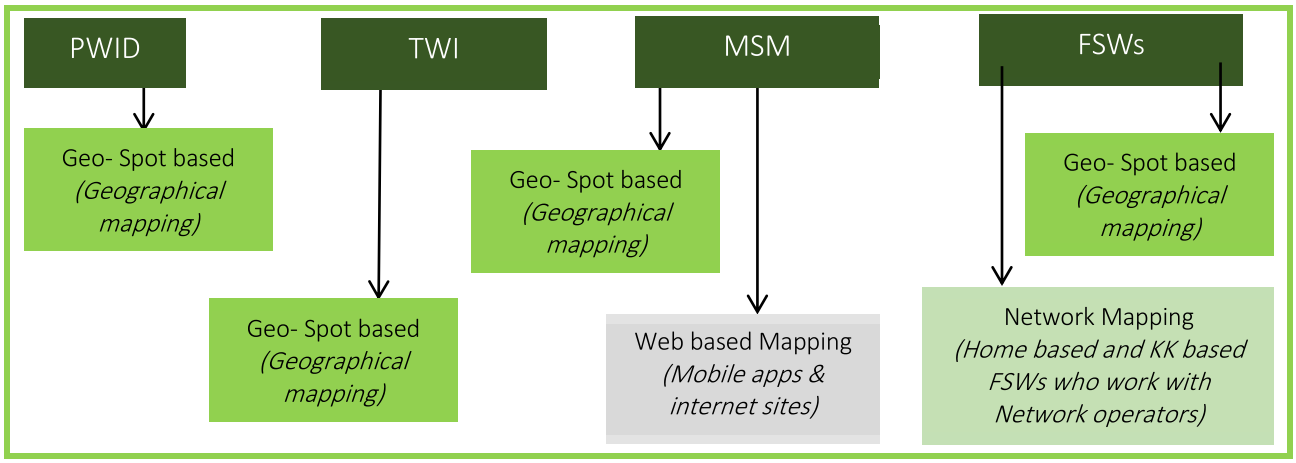
## 3.5 The Mapping Methodology

The mapping exercise was carried out through three different mapping methods for each different key population. While the larger mapping approach was "geographical", it was

supplemented by "network mapping" and "web-based mapping." Thus three major approaches were utilized for this study:

- Geographical Mapping (spot based)
- Network Mapping
- Virtual Mapping (web based)

Figure 3.1 – Various approaches of mapping by Key Population typology.




Broadly, each of the approach included two sequential steps:

- Level 1 – Systematic information-gathering from key informants (KI) regarding the locations ("hotspots)[10] where key population members congregate and/or meet casual or paying sexual partners. These included both geographic and virtual locations.

- Level 2 – Site validation and in-depth profiling of hotspots identified in Level 1.

[10] A geographical Hot spot is a physical location e.g., street spots, restaurants, clubs etc., where key populations congregate to look for sexual partnerships. Likewise virtual hotspots would be websites, web pages, social media websites where KPs register and look for other per members for sexual partnerships. Hand held devices (cell phones etc.,) also have software which could used accordingly (e.g., Gay Romeo, Grinder etc) are also included

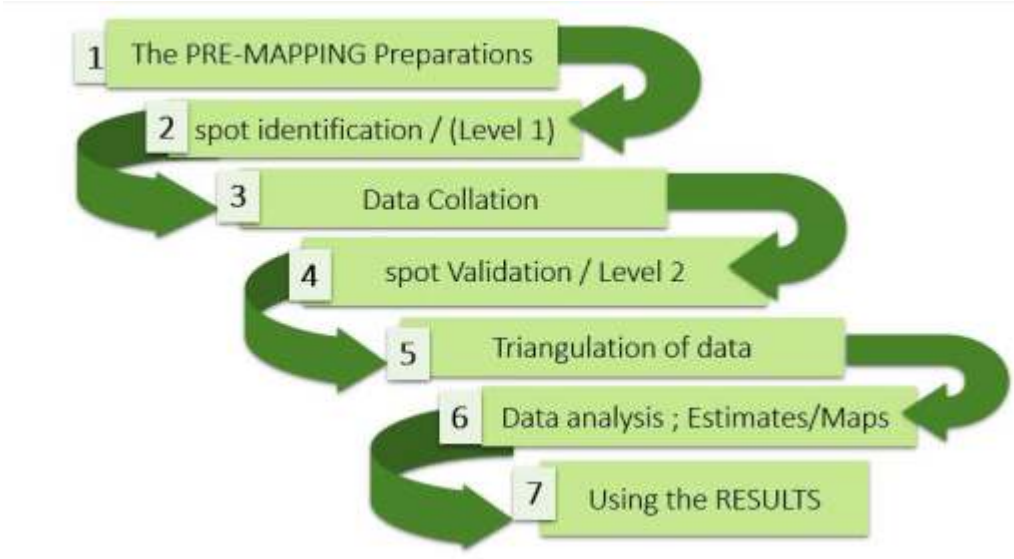
## 3.6 Geographical Mapping – methodological steps

Geographical mapping was carried out for the following key populations:

- People Who Inject Drugs (PWIDs)
- Men who have Sex with Men (MSM) (spot based MSM)
- Transgender (TGs)
- Female sex workers (excluding network based FSWs)

Geographical mapping approach is used to gather data for a key population, to be quantified in terms of number of spots, and the size of the population. It includes information gathering from a physical geographical spot, also called a hotspot/ spot. By locating spots where key populations congregate, information such as the 'who,' 'how many,' 'where and when' and sub-types can be ascertained. Through this information gate-keepers can be identified that can provide information on the operational dynamics of each group. This information is crucial from a programmatic perspective since spots remain stable and are effective intervention points, even though the population is dynamic. Figure 3.2 presents the broad methodological steps of the geographical mapping approach.

Fig 3.2 Broad methodological steps of Geographical Mapping



### 3.6.1 Pre-mapping activities

The pre-mapping phase of the study served as a facilitation phase for the actual mapping activity and laid necessary logistical and conceptual foundations for the data collection. The key aspects of the pre-mapping exercise included:

- Collating and analyzing existing literature and secondary data to gain insights into the variables under study.

- Establishing collaborative relationships with key population members in the study process. The populations under study were difficult to reach and in order to get meaningful cooperation from them it was crucial to develop a rapport. During the preparation phase, key population communities and networks were engaged and strengthened and other relevant stakeholders were identified to answer questions such as: what were the important sub-groups within each key population; what were the types of sites where each KP could be reached; to assess more rigorously whether each key populations supported the mapping exercise or not; and what steps were needed to adequately minimize harm to the key population. During the preparation phase, engagement with key populations was critical, consistent with the approach of "nothing for us without us." During the preparation phase, an assessment of the risks and benefits of programmatic mapping was conducted alongside key population members and once the decision to move forward with the study was made, appropriate safeguards were developed to protect the confidentiality of information and rights of the key populations under study. To gain support and endorsement of community members, they were involved in the overall study process. The strategy adopted for this was to include community members in trainings and to hire these individuals (peers) as part of the research team to help open doors to the more hidden segments of these populations.

- Meetings with partners and stakeholders (governmental departments, non-profit organizations & NGO working with key populations, HIV service providers, etc.) at both the provincial and city level were held to inform them about the purpose and nature of the mapping study, and to solicit their input and support.

- Acquisition and review of detailed maps of the city. After geographical maps were acquired, the entire area under study was divided into smaller data collection 'zones'- which formed sub-units within which data was collected. There were no strict distribution principles of how zones were formed. In most of the cities existing administrative divisions e.g., Union councils, Towns etc., were used to develop ones. Each zone captured

approximately 50,000 to 100,000 of population, providing a good geographical distribution of the target area.

- **Recruitment and training of local field team.** Members of the field teams were recruited based on their past experience in working with key populations as well as experience in mapping studies. All team members got basic training before starting fieldwork, which is an important component of the mapping preparations. Job descriptions for all field team members were developed so as to delineate distribution of work within the field team.

- **Reaching consensus on the various terms, definitions, and instruments** to be used during the mapping study was done prior to the initiation of field work. This was an important step and was done primarily in the training of the core field teams, where data collection team along with peer group members discussed in detail, and reached consensus on the various terms, definitions, and instruments used for the mapping study.

- **Development of a field monitoring process** and a detailed work plan for the local mapping exercise was carried out. A monitoring and a quality assurance system was designed and a timeline was developed to complete the data collection activities within the due time frame.

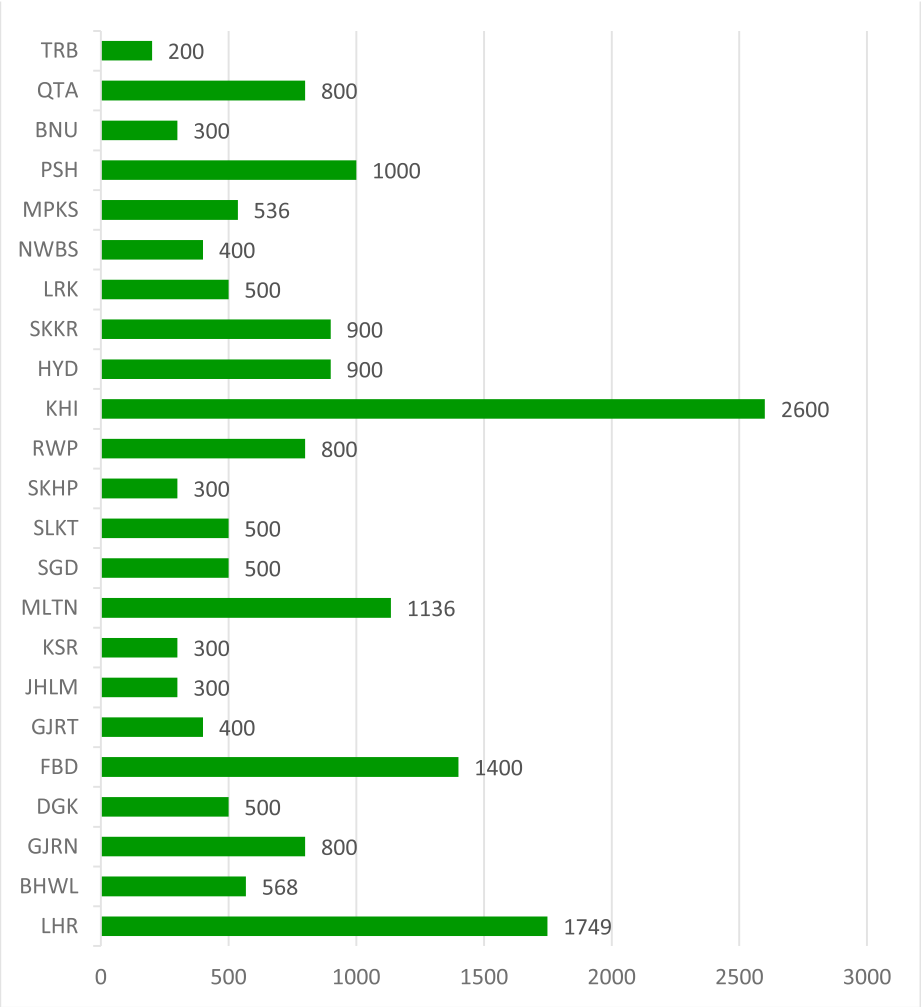
### 3.6.2 Level One (L1) field activity

Level 1 data collection focuses on collecting information from Key Informants (KIs) about the geographic locations within each zone where key population members congregate.

Information about high risk activities in locations within each zone was recorded in a pre-designed format (L1 form – annex 1). The format gathered information on the key geographic locations where high risk activities occurred, along with the typology of the key population and estimated numbers (minimum and maximum) of the population. This information was collected from Key Informants (KIs); persons who are likely to have information on the profiles of the locations and estimates of number of participants in high-risk activity. KI's were classified into two broad types. Primary KIs are people engaged in high risk activities (HRAs) themselves, e.g. sex workers and injecting drug users, while Secondary KIs are people either involved in the network of HRAs or intimately acquainted with persons directly engaged in HRA, e.g. pimps, taxi drivers, STI service providers, and NGO workers etc., Information in L1 is collected through interviewing Secondary KIs.

Level 1 interviews began as casual conversations with secondary KIs, to build rapport and gather information on places where high risk activities took place. Verbal consent was obtained from the secondary KIs during these interviews. KIs included a broad range of individuals, including rickshaw/taxi drivers, shopkeepers, telephone call operators, hawkers, police officers, labourers, students, and people belonging to various professions i.e., tailors, barbers, shopkeepers, property dealers and beggars. In addition to filling L1 forms, the field team also collected information of contact persons who could be used for validation of these spots. A total number of 17,389 L1 interviews were conducted across the 23 cities mapped. City wise distribution of these interviews is provided in Fig 3.3

Fig 3.3 City wise distribution of L1 interviews conducted in Pakistan, 2016



### 3.6.3 Data collation

Following daily Level 1 activity, the team assembled to collate the data collected. Data was assembled and reviewed every day, followed by sorting into various spot lists, which served as a foundation for the next level of activity. Unique identifying codes were also provided to spots, to avoid duplication and multiple counting on each spot.

A computer database was used for data collation and analysis; however, the field teams were encouraged to do manual data collation for the key spots and zones, to develop a thorough understanding of the spots.

The primary outcome of this phase was the development of lists of spots where key populations congregated. Each spot list contained the following information:

- Spot name
- Frequency of mention (each time a spot is mentioned by a KI)
- Spot timing (hours of operation)
- Minimum estimates (average of all minimum values provided by various KIs)
- Maximum estimates (average of all maximum values provided by various KIs)
- Typologies of the populations

The data collated in L1 formed the basis for selection of places to visit for Level 2 interviews.

### 3.6.4 Level Two (L2) field activity

While L1 focused on gathering information on 'hotspots' and places where HRA takes place, 'Level Two' consisted of validating information collected in Phase One, through visiting "hot spots", and interviewing members of key populations present at those spots. This process, called 'spot profiling' or L2 interviews, involved primary key informants (key population members and those closely related, including FSWs, MSM, pimps, madams, brokers, etc.), and focused on validating the information collected and collated in the L1 exercise. Using the Level 2 Form (Annex 02) teams of at least two interviewers went to the identified hotpots to verify the location, describe the type of spot, and got more specific information about the size and characteristics of those usually present. In smaller cities (population < 1 million), all spots identified at L1 were validated, while in larger cities (population > 1 million) atleast more than half of the spots spots with FoM less than 3 were validated. In mega cities like Karachi and Lahore one fourth of the spots were validated.

Once validated, spots were profiled and added to the final spot list. At each identified spot, the field team worked with Social Mobilizers (SMs), persons associated with and trusted by the targeted communities, generally current or former members of these key population groups. Where the SM's knowledge was limited to part of the city, they were asked to introduce to the team to another SM who could better cover the remaining areas. In spots where key population members could not be identified on multiple visits, two secondary KIs were interviewed to verify the L1 information and profile the spot. The focus in L2 was to collect more accurate information about the spot. Interviews with community members provided information such as:

- The typology and estimate of key population members at that spot.
- Activities at the hotspot, namely, seeking risk (looking for partners), or taking risk (place where sexual activity occurs).
- Peak timings and fluctuations in the numbers of participants at the hotspot.
- Overall timings of the spot
- Existence of multiple risk behaviours.

A total number of 13,209 L2 interviews were conducted as part of the geo-mapping approach. Table 3.2 shows number of interviews conducted in each city.

**Table 3.2 No of L2 interviews conducted in Pakistan, 2016**

| | FSW (Geo) | MSM (Geo) | TG | PWID | Total |
|---|---|---|---|---|---|
| Lahore | - | 479 | 804 | - | **1,283** |
| Bahawalpur | 84 | 157 | 150 | 234 | **625** |
| Gujranwala | 161 | 71 | 206 | - | **438** |
| D.G Khan | 26 | 75 | 35 | - | **136** |
| Faisalabad | - | 193 | 254 | - | **447** |
| Gujrat | 34 | 13 | 39 | - | **86** |
| Jhelum | 6 | 6 | 51 | 111 | **174** |
| Kasur | 46 | 145 | 117 | 143 | **451** |
| Multan | - | 468 | 894 | - | **1,362** |
| Sargodha | - | 277 | 168 | - | **445** |
| Sialkot | 139 | 45 | 81 | - | **265** |
| Sheikhupura | 47 | 16 | 63 | - | **126** |
| Rawalpindi | 83 | 132 | 409 | 157 | **781** |
| Karachi | 493 | 774 | 1,139 | 343 | **2,749** |
| Hyderabad | 174 | 158 | 220 | 261 | **813** |

| | | | | | |
|---|---|---|---|---|---|
| Sukkur | 117 | 162 | 170 | 152 | **601** |
| Larkana | 181 | 252 | 178 | 136 | **747** |
| Nawabshah | 92 | 49 | 67 | 50 | **258** |
| Mirpurkhas | 43 | 36 | 67 | 75 | **221** |
| Peshawar | 151 | 89 | 59 | 238 | **537** |
| Bannu | 86 | 114 | 17 | 54 | **271** |
| Quetta | 65 | 92 | 38 | 87 | **282** |
| Turbat | 20 | 32 | 14 | 45 | **111** |
| | **2,048** | **3,835** | **5,240** | **2,086** | **13,209** |

## 3.7 Network Mapping – methodological steps

Unlike sex workers (SWs) who are attached to fixed venues e.g., street spots or work through establishments like brothels etc., there is a number of SWs that rely on network operators/pimps/facilitators or aunties/madams to connect with clients. The conventional geographical approach is not deemed effective and a variant of the approach called "network mapping" is used. In this approach the network of pimps/brokers rather than geographical locations are mapped along with mapping of SWs who are a part of this network.

Network mapping focused on the promoters and mediators of sex work and maps networks within which the target populations operate. Network operators thus were the primary source of information and were mapped along with the number of sex workers each network operator works with. Thus networks of people rather than geographical locations are mapped, which makes the network approach distinctive and different from geographic approach. The process not only gave an estimated number of network operators and sex workers, but also provides an understanding of the dynamics of sex work and size of each network. In addition it also provided a list of geographical establishments and validated them, and identified the power structures managing these networks. Network mapping was done by a different team from the geographical mapping one and relied heavily on the Social Mobilizers.

The methodology was implemented in various phases and includes various sequential steps of field activity:

### 3.7.1 Phase One – PREPARATORY phase

The basic principle of mapping stayed the same as in geographical mapping. In Phase One, the planning or preparatory phase, logistical and conceptual foundations were established including acquisition and review of detailed maps of the target cities, and segmentation of each target

area into zones. A focus group discussion (FGDs) and a few in-depth interviews with NWOs (pimps and brokers) helped determine the appropriate zoning for field data collection and a start was provided for the development of contact lists of NWOs for further network mapping. The basic principle of mapping stayed the same, and the first step was the development of an exhaustive list of NWOs rather than geographical spots in each zone. This list was generated through involving a number of resources including various stakeholders, NWOs and SWs and clients.

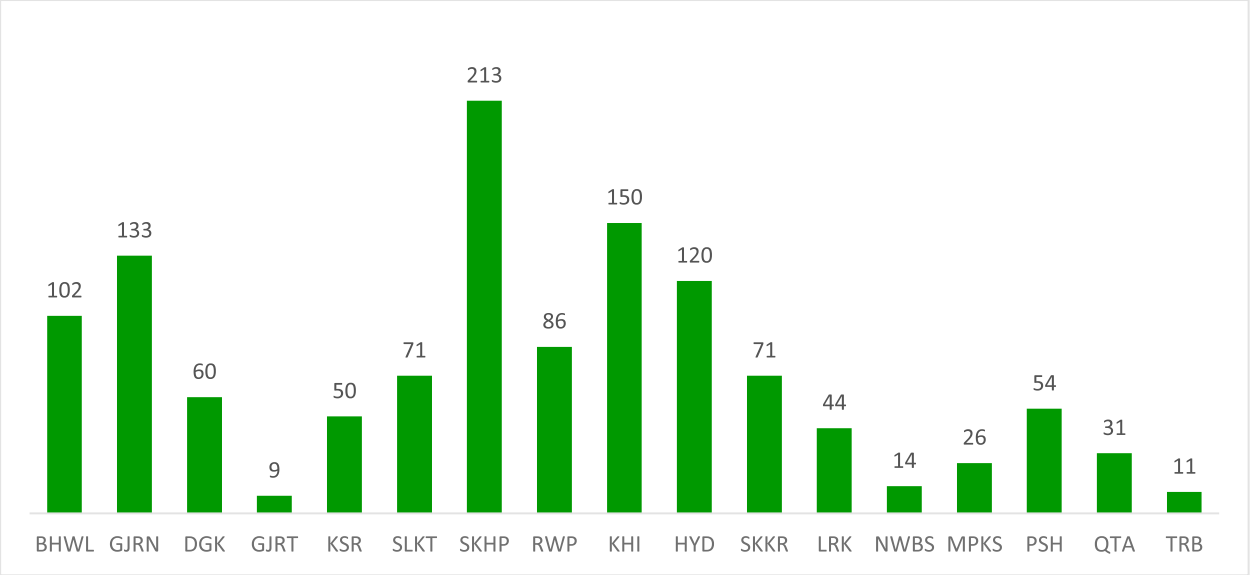
### 3.7.2 Phase Two – DATA COLLECTION phase

Using contacts identified in phase 1, phase 2 involved systematically identifying NWOs working with hidden networks of SWs within a particular area. This involved a process of "snowballing" whereby each key informant in the field (madam and NWO) was asked to identify others that they know. Only NWOs in the same city and currently in business were noted.

Each NWO interviewed was inquired about the total number of SWs with whom he/she works and a minimum and maximum estimate was noted down. Further information on the typology of SWs was also collected, along with part time and indirect sex workers (SWs whom the KI works with through other NWOs). This process continues until a level of "saturation" was attained (i.e. mostly redundant information is obtained from the new contacts about other madams). Saturation was defined as having at least 70-80% of each new NWO mentioned being already identified through previous listing. The total number of 1,245 interviews were conducted with network operators, with city wise distribution shown in Figure 3.4

Finally, all sex work establishments i.e., kothi khanas that the NWO knows of within the same zone as well as the other zone were enumerated. The average number of SWs working with each establishment was noted, which was later used in triangulation of estimates. At least one establishment per NWO was visited and validated as well. This information was gathered in a pre-designed format (network mapping form - Annex 3). The final stage of information consisted of data triangulation and developing a city wide estimate through combining zonal estimates and removing overlaps.

Fig 3.4: No of interviews conducted with NWOs in cities where FSWs were mapped, 2016




## 3.8 Mapping virtual sites

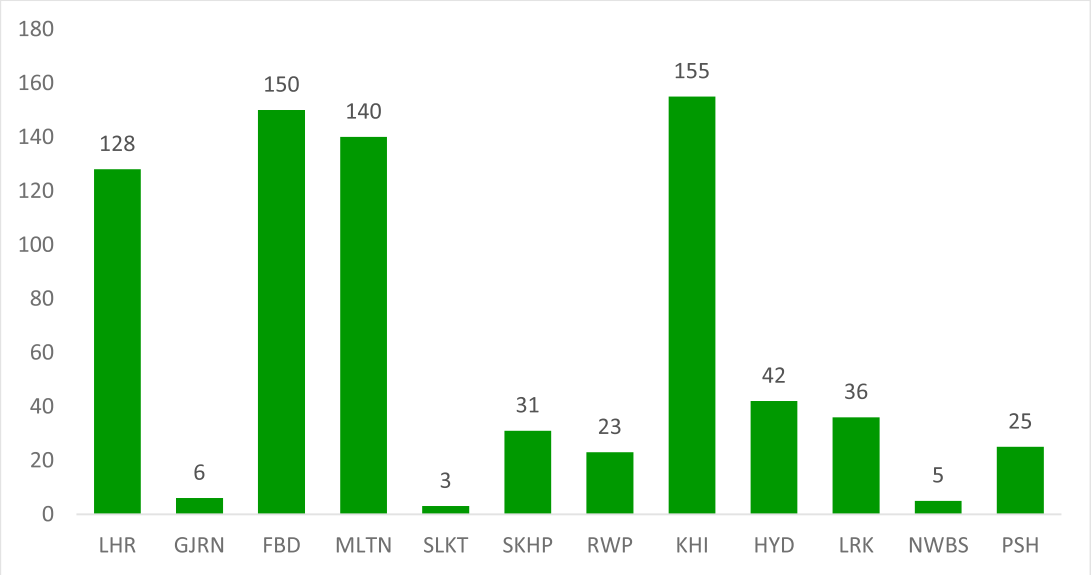
The conceptual approach for mapping virtual sites was conceived as being the same as for mapping geographical sites.

The first step i.e., L1 was carried out to develop an exhaustive list of websites and cell phone applications (apps) through which population members sought sexual and social links. This information was provided by Naz Male Health Alliance (NHMA), who partnered with the technical and implementations teams in the virtual mapping of MSMs. An exhaustive review of such internet sites and web pages was done by a team (preferably community members) through internet searches and getting information through community members in Level 1.

Once the sites were identified, designated MSM team members visited each website/mobile app at 3 times of the days continuously for 2 weeks to note down number of MSM active at each website at different times.

Level 2 respondents were recruited through MSM social mobilizers and through the assistance provided by NHMA. The initial survey participants acted as seeds, and were snowballed to other MSMs. Information was gathered on number of websites registered with, MSM network, days of operations, physical spots visited etc. (Level 2 Profile form: Annex 4). A total number of 744 such interviews were conducted. City wise distribution is shown in Fig 3.5

Fig 3.5: No of interviews conducted with MSM who operate through internet websites, 2016




## 3.9 Field Team Training

Key staff members from each study site were trained by the UM team, who formed a group of core trainers for their own site. The core team comprised of the field coordinator, site coordinators and team supervisors for each city, who were responsible for further training their respective teams at each site. Two such trainings were conducted, one in Karachi and the other one occurred in Lahore. The master trainers from each site next trained their respective field staff in a 2 to 3 days training workshop and providing onsite support to the data collection process.

Trainings focused on issues such as:

- Understanding mapping and basic concepts of geographic/programmatic mapping.
- Mapping methodology and the concept of Level 1 and Level 2 mapping.
- Data collation.
- Basic interviewing skills, with special emphases on interviewing about sex and injecting drug use issues.
- HIV/AIDS: facts and myths.
- Ethical issues.
- Communication, values, and attitudes.
- Different aspects of field work;

- *accessing vulnerable groups;*
- *explaining the rationale and objectives of the study to the subjects;*
- *getting consent for interview;*
- *the interviewing process;*
- *probing and translating information on formats.*

In addition to presentations and hands on exercise done as group work, sessions, actual field visits were included in the workshop, to provide the participants a hands-on experience of field implementation of a mapping study.

## 3.10 Data management and analysis

All data were edited in the field by field editors on a daily basis and corrected for names of zones, missing KI typology, and any missing information. Each site coordinator along with a data base manager was responsible for all aspects of quality and consistency of data at each site.

The data were field edited and was sent over to the Data Management Unit at the National AIDS Control Program in Islamabad. A software specific to the study was designed in MS Access and the data set was entered under supervision by University of Manitoba's Data Management Unit at the National AIDS Control Program. The forms were re-edited at the Data management unit, and once they were thoroughly edited and checked, the forms were given over to the data entry persons, who were responsible for entering the entire data set in a computerized database.

Once the data set was entered, it was analyzed to calculate key population size estimates for each spot. These were rolled up into zonal estimates, and in turned into city-wide estimates. The final estimates were corrected for:

- Frequency of visiting spots – to inflate for the portion of people who visit sites less than once a week
- Invisibility – to inflate for people who find partners exclusively by internet, phone, or through friends
- Double-counting – to account for the overlap between those accessible at physical venues and those who use internet sites

The mobility of key population members, as well as the degree of overlapping of typologies and populations were incorporated into the final estimates.

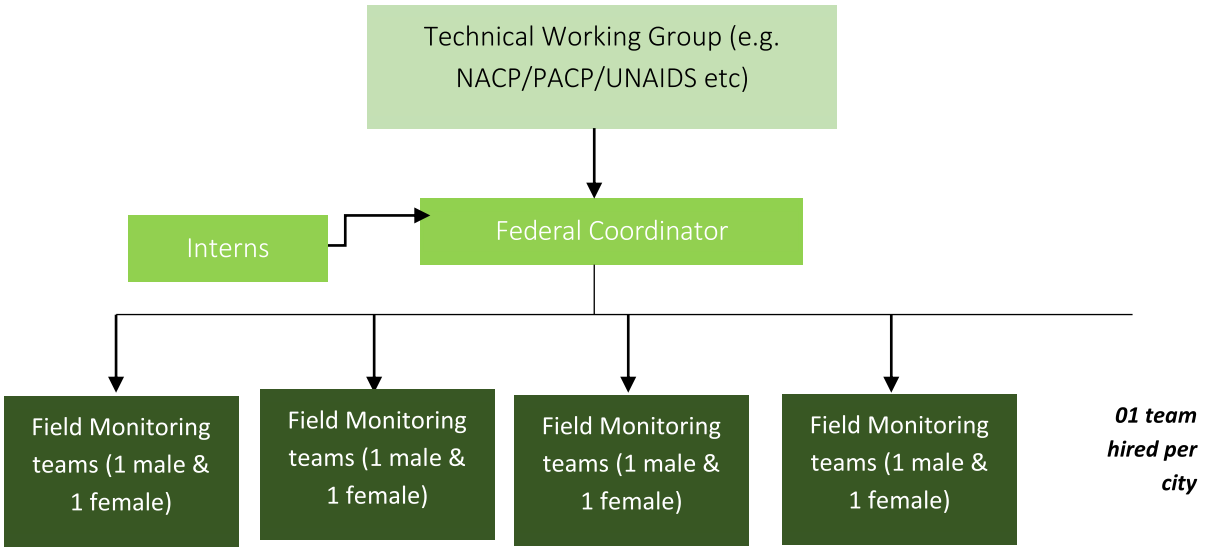
## 3.11 Monitoring and Quality Assurance

While the University of Manitoba team continued to provide onsite technical support to the field teams, a monitoring system was developed to track the progress of the study as well as ensure that quality surveillance data was collected.

Under the National AIDS Control Program, a Control room was set up in Islamabad with the aim to monitor all activities relating to the research study. A field monitoring team was hired by NACP in consultation of Provincial AIDS Control Programs. At the federal level, a Federal Monitor was hired who coordinated all monitoring visits paid by the field team across the country. The Federal monitor was also supported by interns hired by NACP in Islamabad. City level monitors were hired that reported to the Federal Monitor and the team at NACP. Depending on the Key Populations surveyed in each city, a male and a female city monitor were hired.

The monitoring teams vigilantly tracked the operations of Mapping and IBBS activities and provided regular feedback to the Federal Control Room. The monitoring team worked alongside the site coordinators to ascertain field visit times and also made random checks to monitor study progress. They ensured that the SGS protocol was adequately followed and all ethical guidelines were observed in the field.

Fig 3.6 Structure of the Monitoring team



## 3.12 Ethical considerations

This appraisal was designed to meet international ethical protocols by taking effective measures to avoid risk, protect individuals' rights, and ensure safety of all study participants. Geographical mapping, by its nature, gathers information about places and locations where risk activities take place, so potential hazards to the field team and respondents must be addressed.

### 3.12.1 Ethical approval of the Study Protocol

The study protocol was reviewed and approved by Pakistan Medical Research Council (PMRC). All members of the Technical Working group were provided copies of the detailed protocol for their inputs and suggestions to incorporate all ethical principles of conducting research with key populations. All efforts were made to follow the research protocol and it was ensured that all those involved in the data collection were appropriately trained and familiar with the protocol and monitoring measures that were put in place for quality control.

### 3.12.2 Safety of the field teams

A number of steps were taken to ensure the safety of the team.

- Field team members were provided with identification cards. Each team member was required to carry the IDs every time they were in the field.
- Contact was made with the local community police office by the Coordinator to inform them about the research and solicit support.
- Each field team member was required to have a cell phone, for which call credit was provided for emergency calls.
- Field team members were not permitted to work alone. All fieldwork was done in pairs.
- A session on security measures was included in the training program, where experiences and lessons learned from previous projects were shared and discussed. Training included how to assess for safety and potential hazards in an area. Safety concerns included areas that were isolated, poorly lit, and/or identified by informants (or team members' own experiences) as being unsafe. If staff was unsure about the safety of an area, this was worked through with the Coordinator, including the implementation of safeguards if a decision was made to proceed. These included only visiting the area during the day, when no large groups were present in the area, etc.
- In the course of fieldwork, staff was allowed to leave a location at any time and for any reason if they felt that it was unsafe. This must be respected by their

partner/teammate(s). If this step was taken, the Coordinator was informed and next steps were discussed.

- Constant contact was maintained between the field team and Coordinator while the team was in the field. Generally this took the form of phone contact or text message atleast twice a day with the team's exact location, and an ongoing assessment of safety.
- Safety formed a regular item for de-briefing every day. The team discussed any untoward situations or security threats faced in the field and discussed measures to avoid or mitigate similar situations in the future.

### 3.12.3 Safety of the key populations

SGS has been successfully conducted in Pakistan over the last many years and no harm to a community or its individual members has ever been reported. Conversely, we were aware of appreciable benefits to communities that (for example) now had improved access to quality services and/or higher uptake of services. The following considerations were incorporated into the study design:

- Community leadership and involvement: It was not possible to implement this study adequately without the explicit and active involvement of the local population representatives, beginning with the initial discussions, through formative stages, qualitative work, and any mapping and survey elements used. In effect, the community was given the power to make decisions on how this project was implemented. If community members or other stakeholders at any stage expressed a concern (confidentiality, other risks, etc.), these were addressed to the satisfaction of both stakeholders and the research team.
- Safety of the target population: Considerable effort was taken to maintain the safety of respondents. It was acknowledged that completing an interview comprising potentially sensitive questions in a public place could cause discomfort or even put respondents at risk. The team was trained to ensure that interviews were undertaken in a private place and that the initial approach to a potential respondent did not compromise the safety of the respondent (nor their own).
- Confidentiality of responses: Strict measures were taken to ensure and maintain participants' confidentiality. No nominal information was required or used for any part of the investigation. No written consent was sought. A non-identifying coding system was used to track study data while assuring non-disclosure of participants' identities. No initials were collected and no linking of individuals was possible with future studies. All survey-related materials (e.g., completed questionnaires, maps, etc.) were kept in a secure and locked cabinet at the survey field office, which was accessible only to the

study coordinator and staff. Electronic data was password protected, and only PIs and authorized officials had access to the data files. The final report does not contain information which could lead to identification of spots and places where key populations congregate. The tables and maps presented in the report are population estimates and do not include details about individual spots nor persons. Details on spots and key populations are provided separately to PACPs, the confidentiality of which are assured by the organization.

### 3.12.4 Recruitment Process

Participation was voluntary and no coercion was used in the recruitment process. Individuals who refused to participate in the study were not adversely affected in any way. After selection of required number of subjects the list was provided to the team supervisor and social mobilizers. They contacted each selected study subject individually during non-working hours and informed them of date, time and venue of the interview. The social mobilizers were asked to sign a confidentiality agreement that they would not disclose who they approached to be in the study. On refusal or non-availability of the subject the next participant on the list was invited to participate. Social mobilizers were recruited from union workers. They helped access the participants, and along with the team supervisor recruited the study subjects; participation in the study was entirely voluntarily, no coercion was used either from study team or social mobilizers for recruitment. Anyone wishing to find out about more information on the survey was given contact details of the study Coordinator or members of the local research team. All participants were given a thorough briefing on the survey and an explanation of the procedures. All participants were informed of the procedures that would ensure their confidentiality.



### 3.12.5 Informed Consent

Recruitment of participants was conducted only after describing the study procedures and obtaining informed consent. During the process of obtaining informed consent, participants were clearly informed that participation was voluntary and that non-participation would have no negative consequences in terms of access to programs or services. Informed verbal consent was obtained prior to entry into the survey, both at Level 1 and Level 2. This was done through a standard consent form at the beginning of each questionnaire that was to be read out to the participant by the interviewer. The interviewer signed the appropriate place on the questionnaire to indicate that consent was obtained before proceeding with data collection.

# 4. PEOPLE WHO INJECT DRUGS (PWID)

Within this exercise, people who inject drugs were defined as "men or women who currently inject drugs, regularly for non therapeutic purposes" Those who have self-injected medicines for medical purposes were excluded.

It needs to be mentioned that mapping of PWID was conducted in only 14 cities in Pakistan. A few major cities in Punjab, which included Lahore, Faisalabad, Sargodha, Multan etc., were not included in this study. Thus results of this study, specifically for Punjab, should be extrapolated with caution, as some of the major cities where high prevalence of drug injecting is not included.

## 4.1 Estimated Number of People Who Inject drugs

The mapping study estimated 37,137 (range; 31,138 to 41,752) people who inject drugs spread over 7401 spots in 14 cities of Pakistan. Of the total estimated number of PWID mapped, almost two thirds were reported from Karachi, which has 24,036 PWID. Bahawalpur reported the second highest estimated number of PWID, with 2,755 estimated PWID, making up 7.4% of the total estimated number of PWID. The third highest estimate for PWID were reported from Hyderabad (2,164 PWID), making up 5.8% of the total estimated number of PWID.

Table 4.1: Estimated number of People Who Inject Drugs in Pakistan, 2016

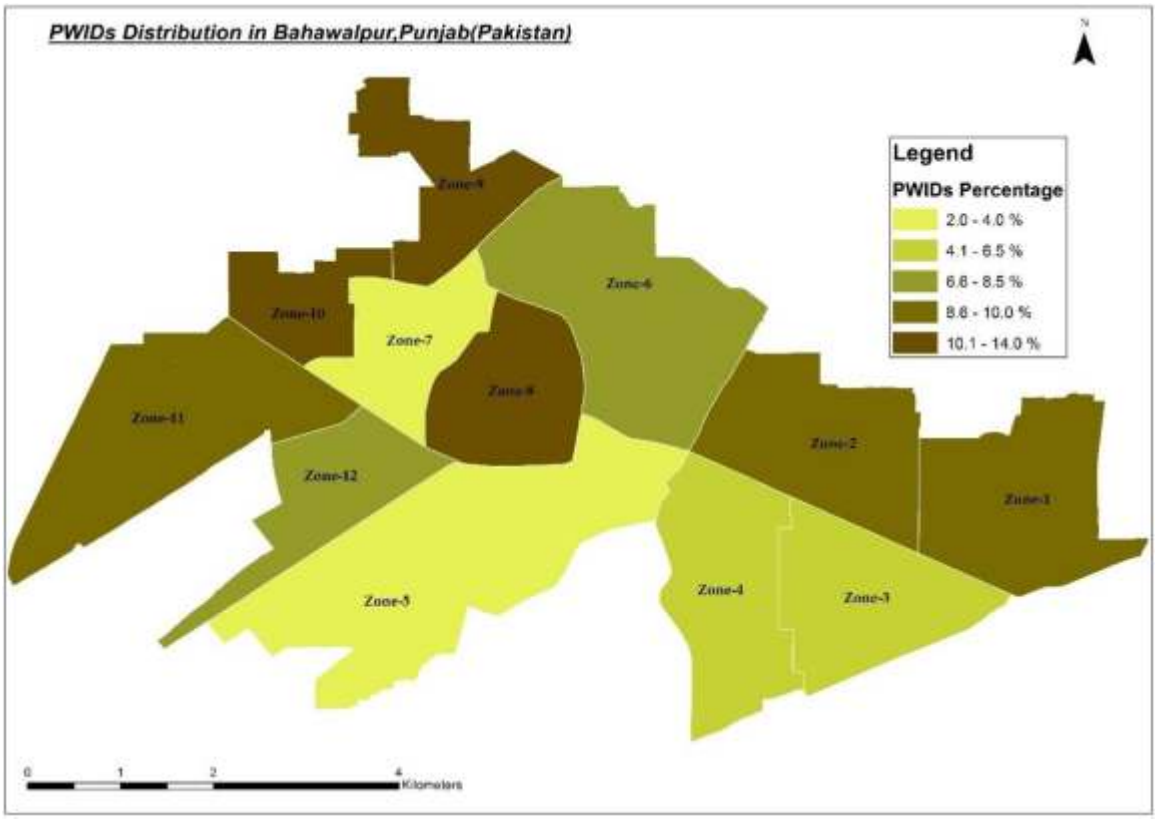
| | No of Spots | Adj. Min | Adj. Max | Adj. Avg. | % dist |
|---|---|---|---|---|---|
| Quetta | 86 | 397 | 558 | 503 | 1.4% |
| Turbat | 45 | 233 | 379 | 316 | 0.9% |
| Bannu | 54 | 116 | 173 | 146 | 0.4% |
| Peshawar | 252 | 594 | 1,085 | 871 | 2.3% |
| Bahawalpur | 574 | 2,274 | 3,235 | 2,755 | 7.4% |
| Jhelum | 121 | 254 | 383 | 339 | 0.9% |
| Kasoor | 148 | 646 | 783 | 715 | 1.9% |
| Rawalpindi | 461 | 1,051 | 1,542 | 1,308 | 3.5% |
| Hyderabad | 520 | 1,801 | 2,499 | 2,164 | 5.8% |
| Karachi | 4574 | 20,809 | 26,982 | 24,036 | 64.7% |

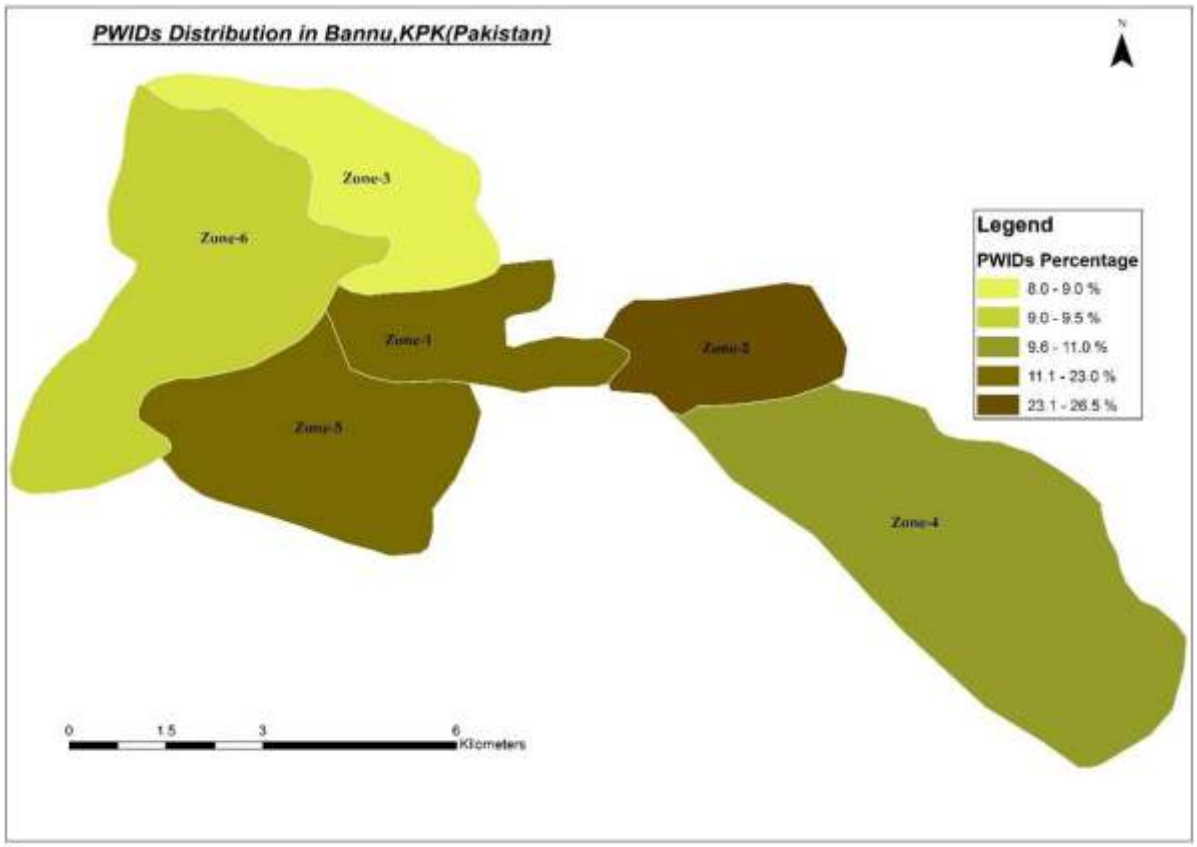
| | | | | | |
|---|---|---|---|---|---|
| Larkana | 159 | 734 | 1,242 | 1,204 | 3.2% |
| Mirpur Khas | 84 | 659 | 836 | 778 | 2.1% |
| Nawabshah | 146 | 815 | 1,071 | 984 | 2.7% |
| Sukkur | 177 | 757 | 984 | 1,016 | 2.7% |
| | 7,401 | 31,138 | 41,752 | 37,137 | |

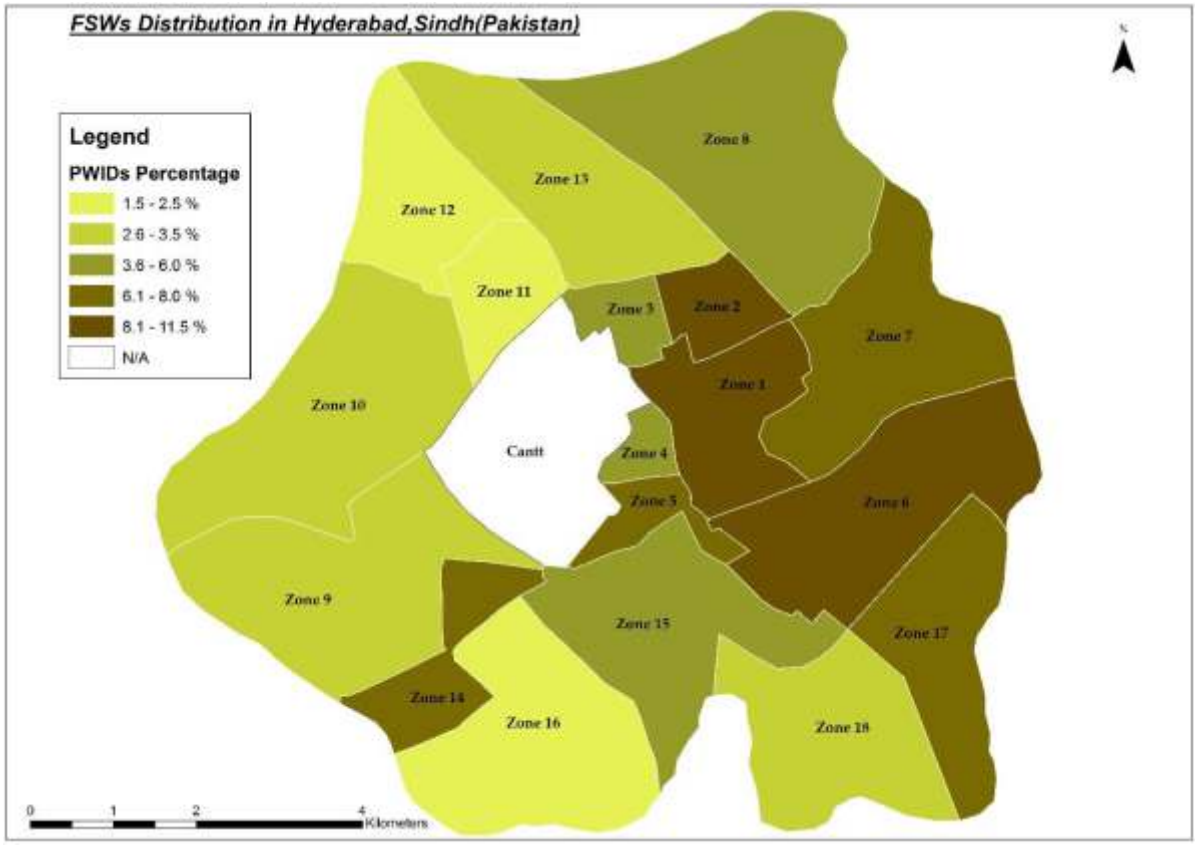
The predominant proportion of PWID that were mapped in 14 cities across Pakistan were all men, leading to the conclusion that the PWID population in Pakistan is largely male. A very insignificant number of Female PWID were reported in the mapping exercise; only 44 female PWID were reported from 19 spots, giving it an average of 2.1 female PWID per spot.

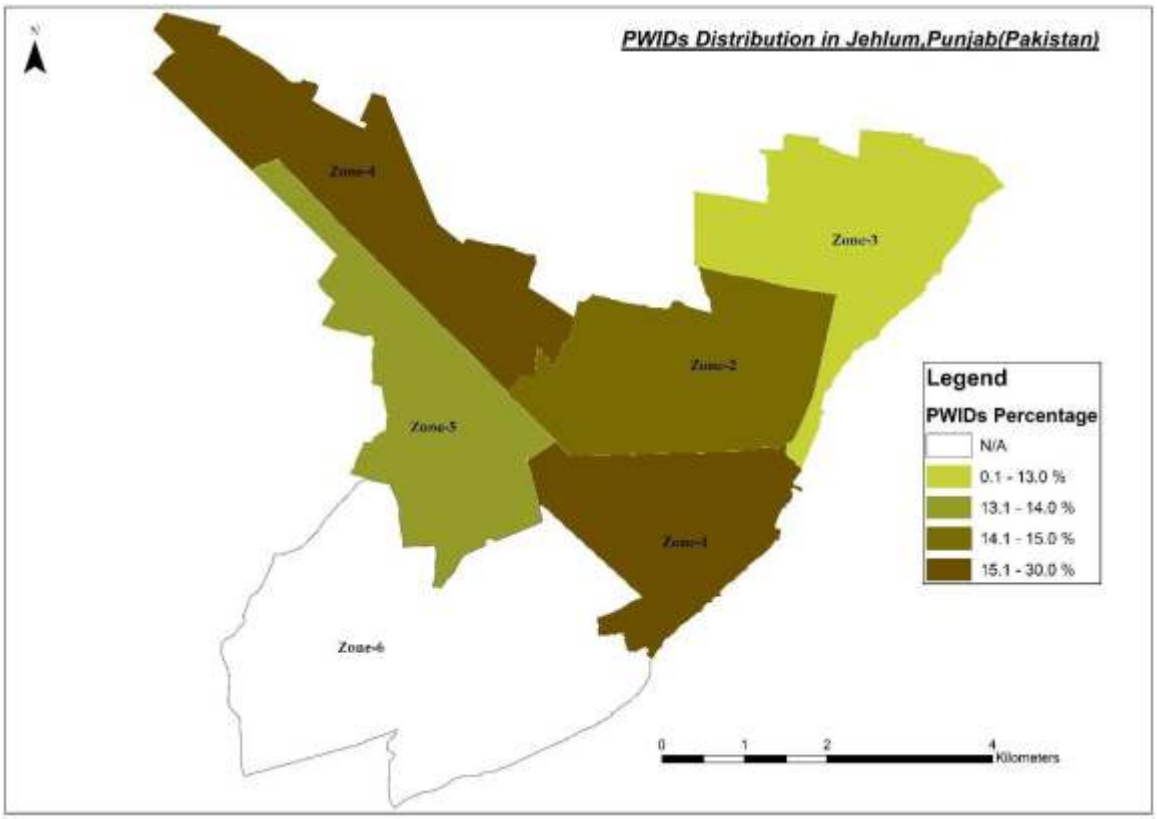
## 4.2 Zone wise distribution of PWID in each city

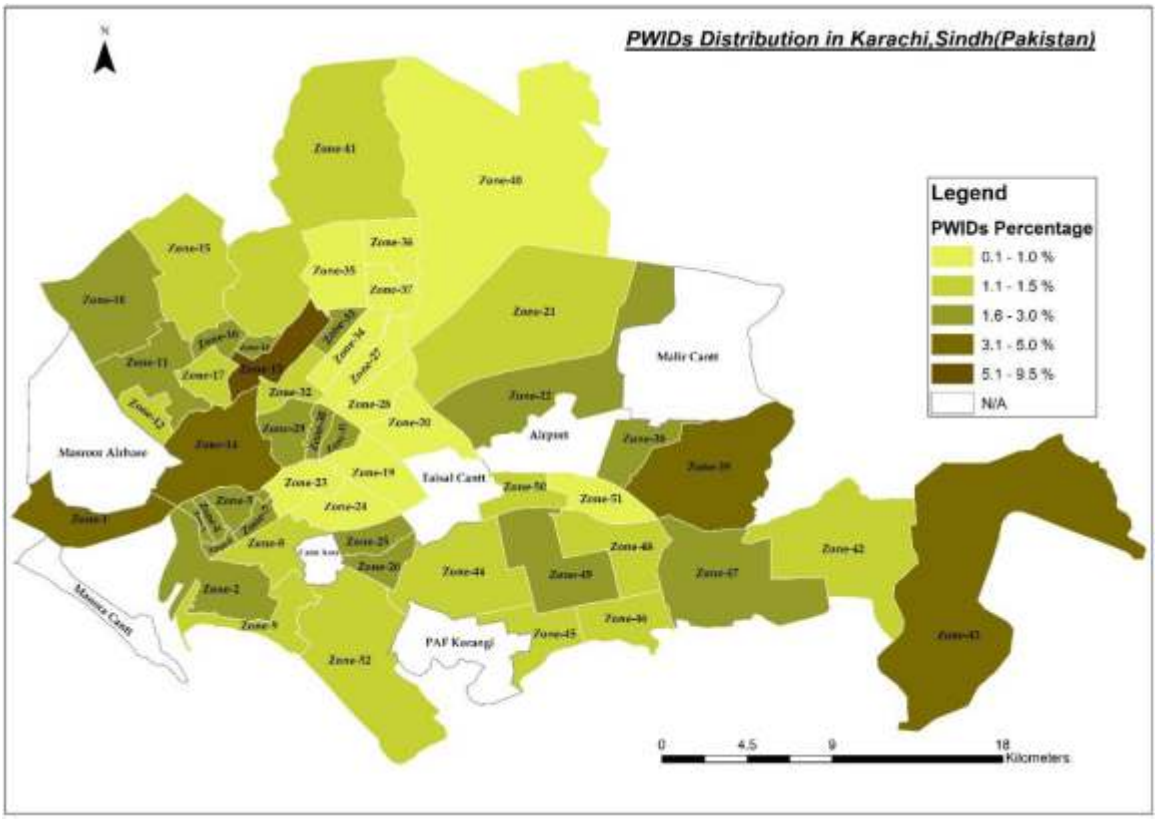
This section presents distribution maps of PWID in the 14 cities of Pakistan where mapping exercise was conducted out. The density of PWID in each city is illustrated according to the depth of the colour.

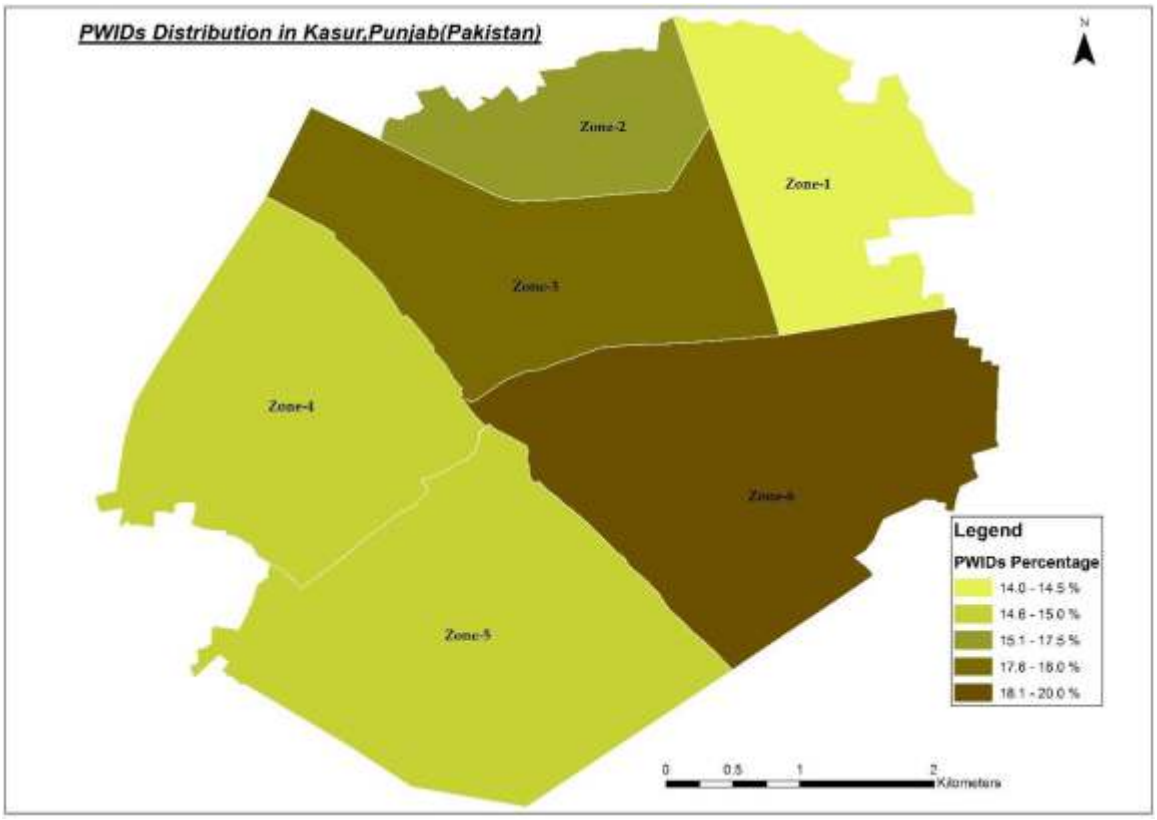


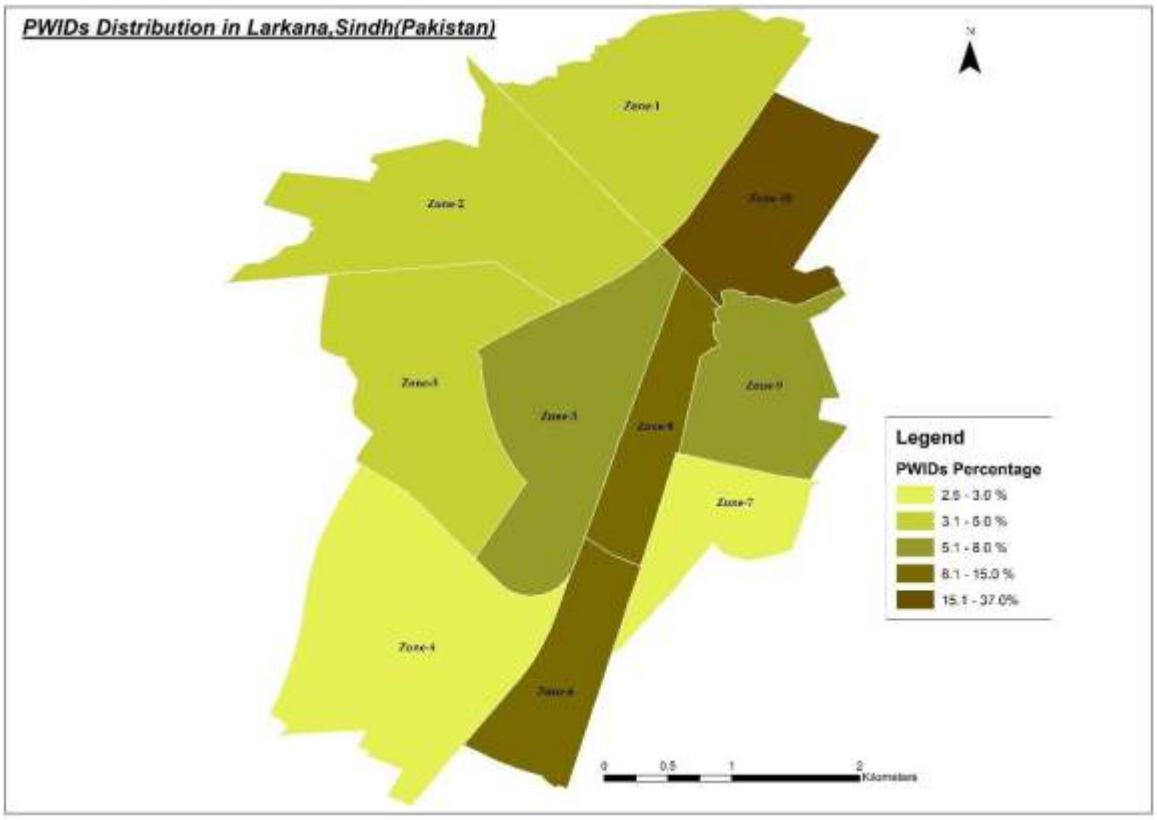

PWIDs Distribution in Bannu,KPK(Pakistan)
N
Zone-3
Zone-6
Zone-1
Zone-2
Zone-5
Zone-4
Legend
PWIDs Percentage
8.0 - 9.0 %
9.0 - 9.5 %
9.6 - 11.0 %
11.1 - 23.0 %
23.1 - 26.5 %
0
1.5
3
6
Kilometers

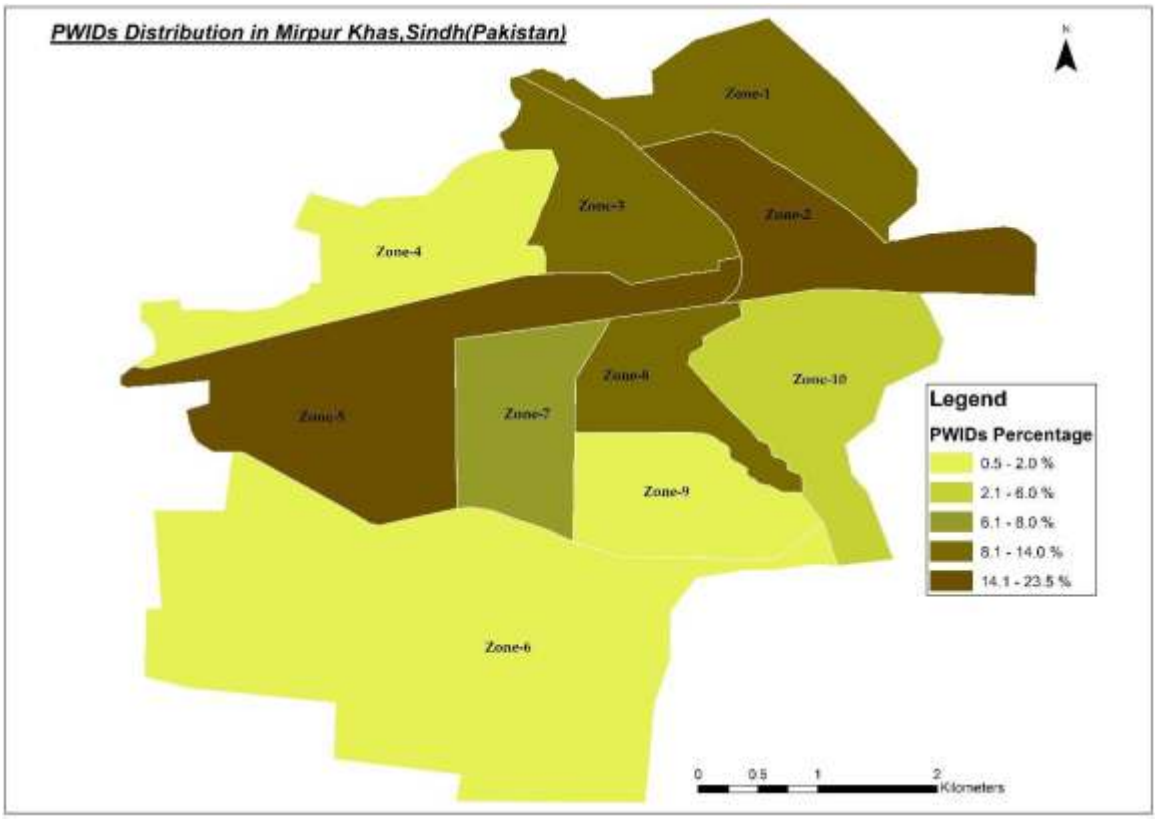

FSWs Distribution in Hyderabad,Sindh(Pakistan)
N
Legend
PWIDs Percentage
1.5 - 2.5 %
2.6 - 3.5 %
3.6 - 6.0 %
6.1 - 8.0 %
8.1 - 11.5 %
N/A
Zone 8
Zone 13
Zone 12
Zone 11
Zone 3
Zone 2
Zone 7
Zone 1
Zone 10
Cantt
Zone 4
Zone 5
Zone 6
Zone 9
Zone 15
Zone 17
Zone 14
Zone 16
Zone 18
0
1
2
4
Kilometers

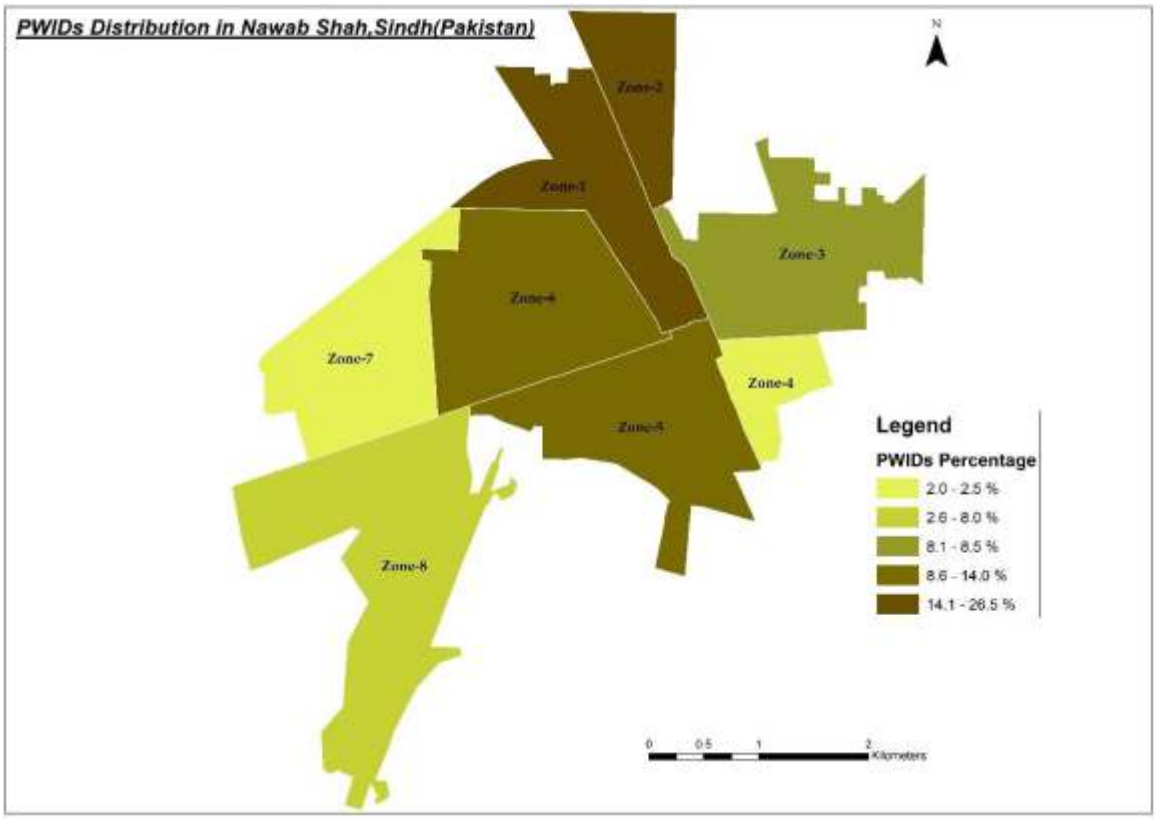

PWIDs Distribution in Jehlum,Punjab(Pakistan)
N
Zone-4
Zone-3
Zone-2
Zone-5
Zone-1
Zone-6
Legend
PWIDs Percentage
N/A
0.1 - 13.0 %
13.1 - 14.0 %
14.1 - 15.0 %
15.1 - 30.0 %
0
1
2
4
Kilometers

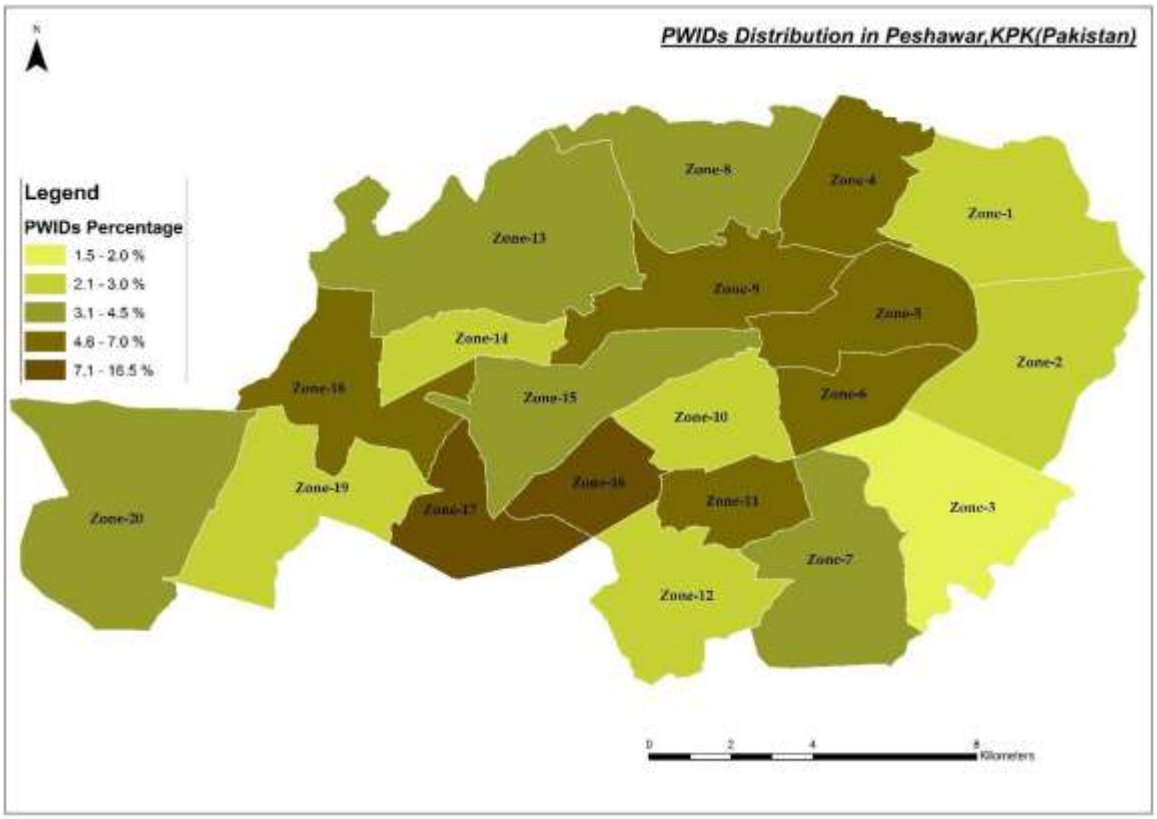

PWIDs Distribution in Karachi,Sindh(Pakistan)
N
Zone-41
Zone-40
Zone-15
Zone-36
Zone-35
Zone-37
Zone-18
Zone-21
Zone-11
Zone-17
Zone-34
Zone-27
Zone-32
Zone-22
Zone-26
Zone-30
Zone-13
Zone-14
Zone-28
Zone-19
Zone-23
Zone-24
Zone-1
Zone-6
Zone-25
Zone-20
Zone-2
Zone-9
Zone-52
Zone-44
Zone-45
Zone-46
Zone-47
Zone-42
Zone-43
Mauripur Airbase
Malir Cantt
Airport
Faisal Cantt
Masroor Cantt
PAF Korangi
Legend
PWIDs Percentage
0.1 - 1.0 %
1.1 - 1.5 %
1.6 - 3.0 %
3.1 - 5.0 %
5.1 - 9.5 %
N/A
0
4.5
9
18
Kilometers

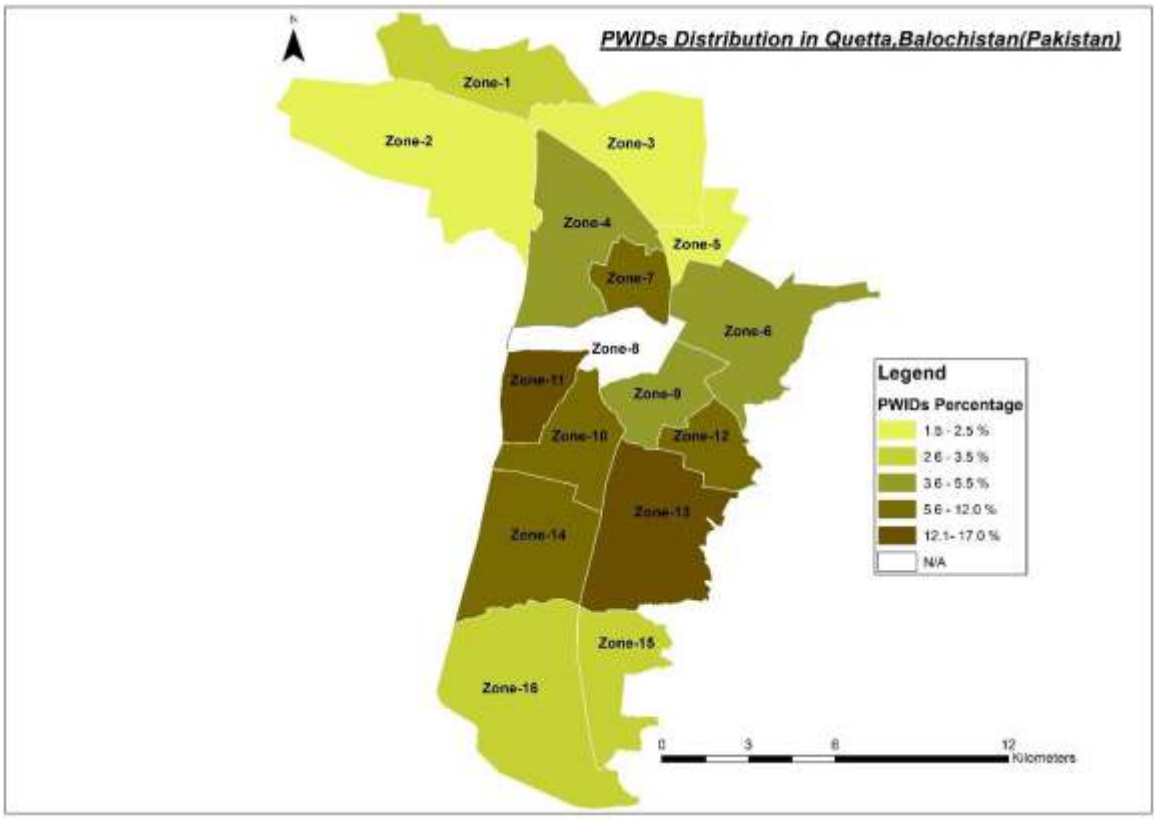

PWIDs Distribution in Kasur,Punjab(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Legend
PWIDs Percentage
14.0 - 14.5 %
14.6 - 15.0 %
15.1 - 17.5 %
17.6 - 18.0 %
18.1 - 20.0 %
0
0.5
1
2
Kilometers

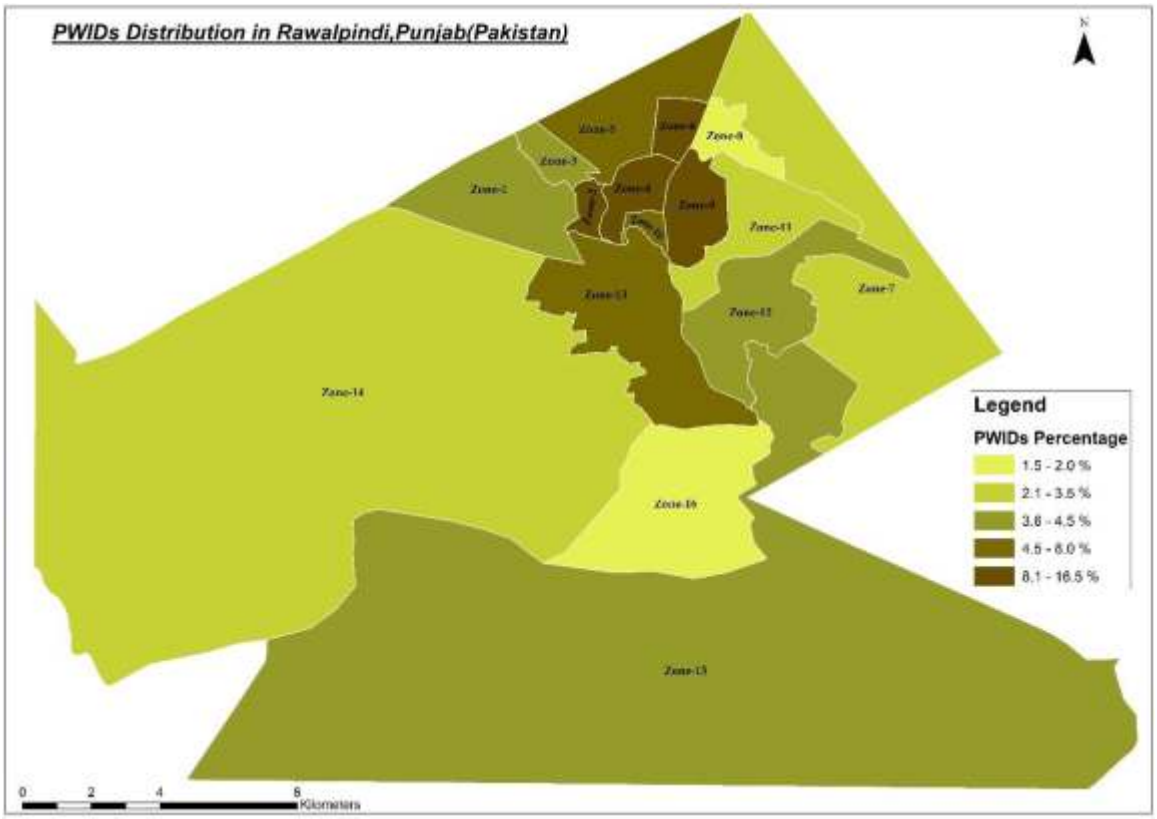

PWIDs Distribution in Larkana,Sindh(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Legend
PWIDs Percentage
2.5 - 3.0 %
3.1 - 5.0 %
5.1 - 8.0 %
8.1 - 15.0 %
15.1 - 37.0%
0
0.5
1
2
Kilometers

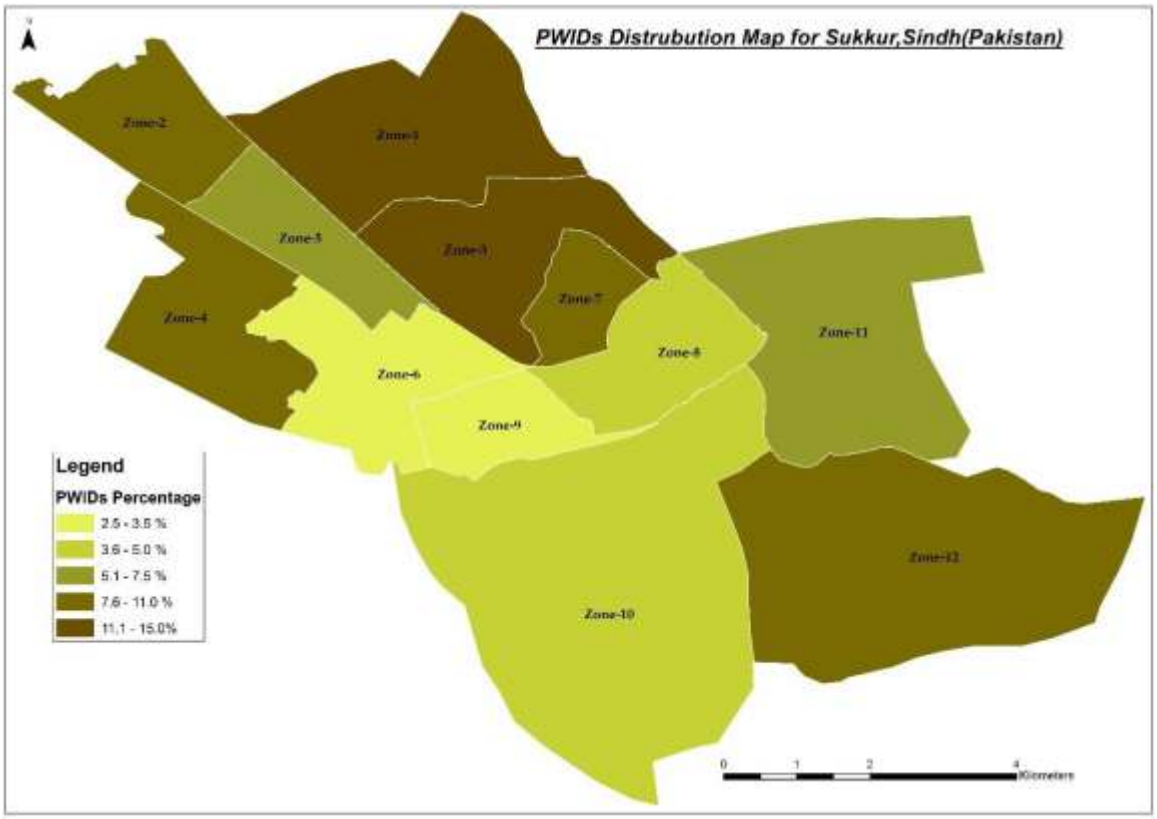

PWIDs Distribution in Mirpur Khas,Sindh(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Legend
PWIDs Percentage
0.5 - 2.0 %
2.1 - 6.0 %
6.1 - 8.0 %
8.1 - 14.0 %
14.1 - 23.5 %
0 0.5 1 2
Kilometers

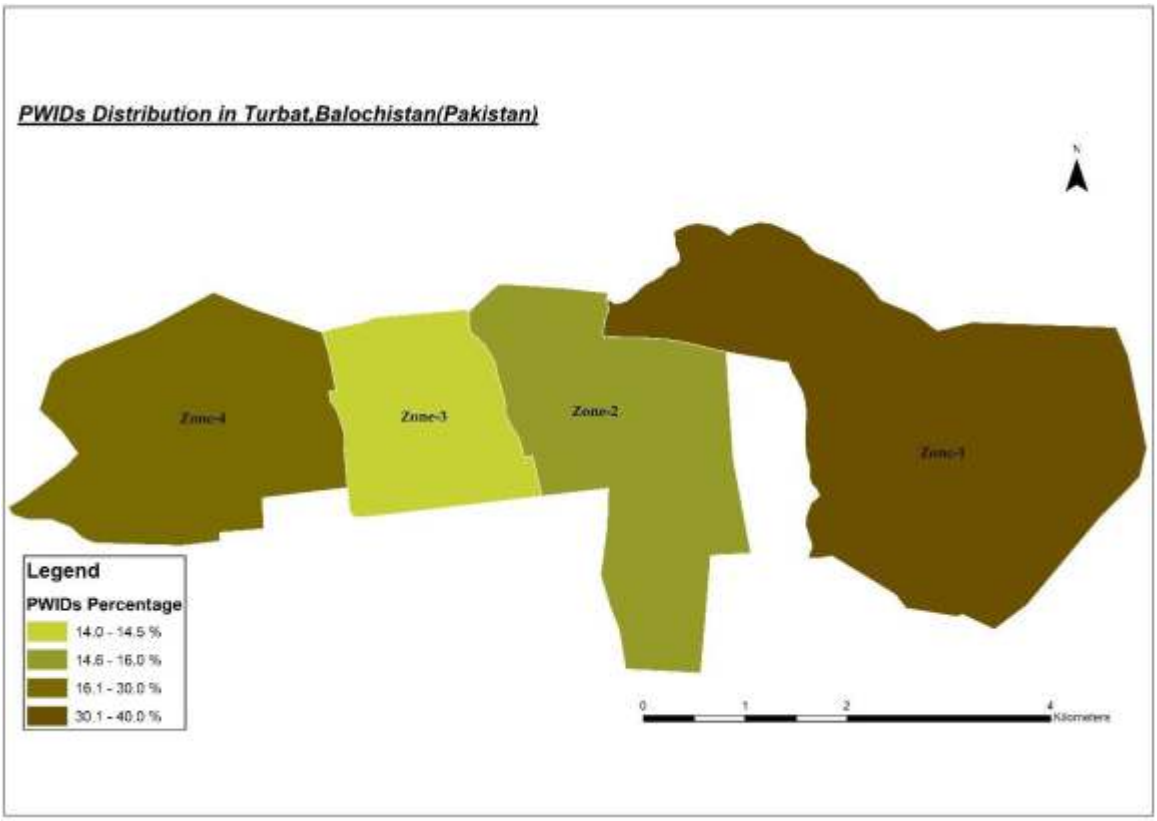

PWIDs Distribution in Nawab Shah,Sindh(Pakistan)
N
Zone-2
Zone-3
Zone-4
Zone-5
Zone-7
Zone-8
Legend
PWIDs Percentage
2.0 - 2.5 %
2.6 - 8.0 %
8.1 - 8.5 %
8.6 - 14.0 %
14.1 - 26.5 %
0 0.5 1 2
Kilometers


PWIDs Distribution in Peshawar,KPK(Pakistan)
N
Legend
PWIDs Percentage
1.5 - 2.0 %
2.1 - 3.0 %
3.1 - 4.5 %
4.6 - 7.0 %
7.1 - 16.5 %
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
Zone-17
Zone-18
Zone-19
Zone-20
0
2
4
8
Kilometers


PWIDs Distribution in Quetta,Balochistan(Pakistan)
N
Legend
PWIDs Percentage
1.5 - 2.5 %
2.6 - 3.5 %
3.6 - 5.5 %
5.6 - 12.0 %
12.1 - 17.0 %
N/A
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
0
3
6
12
Kilometers


PWIDs Distribution in Rawalpindi,Punjab(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Legend
PWIDs Percentage
1.5 - 2.0 %
2.1 - 3.5 %
3.6 - 4.5 %
4.5 - 6.0 %
6.1 - 16.5 %
0
2
4
8
Kilometers


PWIDs Distrubution Map for Sukkur,Sindh(Pakistan)
N
Zone-2
Zone-3
Zone-5
Zone-8
Zone-7
Zone-4
Zone-11
Zone-6
Zone-8
Zone-9
Zone-12
Zone-10
Legend
PWIDs Percentage
2.5 - 3.5 %
3.6 - 5.0 %
5.1 - 7.5 %
7.6 - 11.0 %
11.1 - 15.0%
0
1
2
4
Kilometers




## 4.3 Number of PWID in each zone in each city

While the maps show the density of PWID in different zones, the corresponding tables provide numbers within each city. Wide variations in spot numbers and total number of PWIDs in each zone can be noted. This is extremely valuable information for program design and resource allocation within each program as it highlights zones which need to be focussed and also helps in human resource calculation for outreach.

Table 4.2: Zone wise estimates of PWID in cities mapped in Pakistan, 2016

| City | Zone | Spots | Min | Max | City | Zone | Spots | Min | Max |
|---|---|---|---|---|---|---|---|---|---|
| Quetta | 1 | 3 | 10 | 13 | Karachi | 1 | 124 | 1526 | 1786 |
| | 2 | 3 | 7 | 11 | | 2 | 125 | 783 | 1012 |
| | 3 | 2 | 5 | 7 | | 3 | 104 | 522 | 734 |
| | 4 | 3 | 19 | 24 | | 4 | 138 | 499 | 770 |
| | 5 | 2 | 5 | 7 | | 5 | 146 | 741 | 1025 |
| | 6 | 4 | 16 | 20 | | 6 | 71 | 506 | 679 |

| | | | | |
|---|---|---|---|---|
| | 7 | 12 | 35 | 50 |
| | 9 | 5 | 13 | 18 |
| | 10 | 7 | 29 | 38 |
| | 11 | 10 | 47 | 91 |
| | 12 | 9 | 44 | 55 |
| | 13 | 7 | 49 | 60 |
| | 14 | 11 | 40 | 53 |
| | 15 | 4 | 11 | 17 |
| | 16 | 4 | 9 | 13 |
| Peshawar | 1 | 12 | 14 | 35 |
| | 2 | 13 | 14 | 33 |
| | 3 | 8 | 9 | 20 |
| | 4 | 14 | 27 | 54 |
| | 5 | 18 | 31 | 76 |
| | 6 | 11 | 30 | 52 |
| | 7 | 14 | 17 | 36 |
| | 8 | 12 | 16 | 40 |
| | 9 | 19 | 28 | 70 |
| | 10 | 8 | 14 | 33 |
| | 11 | 13 | 32 | 63 |
| | 12 | 9 | 14 | 30 |
| | 13 | 8 | 23 | 34 |
| | 14 | 9 | 14 | 27 |
| | 15 | 11 | 26 | 42 |
| | 16 | 32 | 106 | 158 |
| | 17 | 22 | 67 | 103 |
| | 18 | 14 | 35 | 61 |
| | 19 | 2 | 20 | 28 |
| | 20 | 3 | 25 | 32 |
| Bahawalpur | 1 | 59 | 226 | 390 |
| | 2 | 60 | 204 | 370 |
| | 3 | 31 | 132 | 234 |
| | 7 | 98 | 510 | 714 |
| | 8 | 65 | 464 | 643 |
| | 9 | 84 | 441 | 575 |
| | 10 | 94 | 703 | 927 |
| | 11 | 79 | 546 | 702 |
| | 12 | 92 | 367 | 509 |
| | 13 | 150 | 2809 | 3601 |
| | 14 | 141 | 1484 | 1894 |
| | 15 | 116 | 486 | 677 |
| | 16 | 76 | 532 | 708 |
| | 17 | 85 | 408 | 568 |
| | 18 | 148 | 629 | 834 |
| | 19 | 45 | 122 | 180 |
| | 20 | 14 | 56 | 77 |
| | 21 | 88 | 449 | 538 |
| | 22 | 124 | 567 | 725 |
| | 23 | 62 | 200 | 273 |
| | 24 | 36 | 249 | 299 |
| | 25 | 70 | 590 | 757 |
| | 26 | 69 | 560 | 697 |
| | 27 | 54 | 170 | 242 |
| | 28 | 52 | 179 | 275 |
| | 29 | 126 | 969 | 1193 |
| | 30 | 111 | 837 | 1110 |
| | 31 | 90 | 639 | 780 |
| | 32 | 89 | 275 | 393 |
| | 33 | 110 | 574 | 784 |
| | 34 | 34 | 257 | 320 |
| | 35 | 29 | 140 | 189 |
| | 36 | 38 | 198 | 259 |
| | 37 | 40 | 134 | 186 |
| | 38 | 150 | 942 | 1124 |

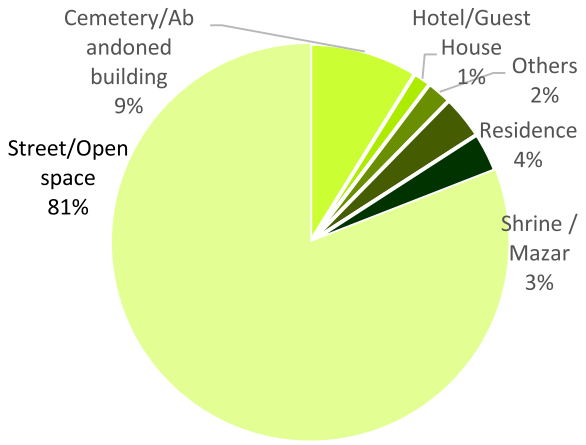
| | | | | |
|---|---|---|---|---|
| | 4 | 40 | 164 | 233 |
| | 5 | 36 | 85 | 163 |
| | 6 | 56 | 215 | 320 |
| | 7 | 19 | 44 | 82 |
| | 8 | 60 | 326 | 406 |
| | 9 | 71 | 385 | 483 |
| | 10 | 64 | 312 | 390 |
| | 11 | 47 | 249 | 335 |
| | 12 | 31 | 249 | 280 |
| Jhelum | 1 | 30 | 70 | 102 |
| | 2 | 18 | 38 | 56 |
| | 3 | 16 | 32 | 49 |
| | 4 | 36 | 75 | 113 |
| | 5 | 21 | 33 | 54 |
| Kasoor | 1 | 27 | 95 | 127 |
| | 2 | 25 | 117 | 148 |
| | 3 | 33 | 121 | 161 |
| | 4 | 17 | 128 | 101 |
| | 5 | 20 | 100 | 130 |
| | 6 | 26 | 133 | 174 |
| Rawalpindi | 1 | 21 | 49 | 73 |
| | 2 | 57 | 153 | 222 |
| | 3 | 18 | 47 | 67 |
| | 4 | 55 | 213 | 287 |
| | 5 | 30 | 72 | 110 |
| | 6 | 35 | 140 | 178 |
| | 7 | 16 | 32 | 53 |
| | 8 | 11 | 18 | 33 |
| | 9 | 50 | 144 | 219 |
| | 10 | 47 | 93 | 151 |
| | 11 | 15 | 33 | 55 |
| | 39 | 138 | 1230 | 1541 |
| | 40 | 55 | 246 | 328 |
| | 41 | 73 | 307 | 424 |
| | 42 | 103 | 380 | 497 |
| | 43 | 159 | 1227 | 1459 |
| | 44 | 83 | 376 | 508 |
| | 45 | 73 | 355 | 481 |
| | 46 | 47 | 512 | 654 |
| | 47 | 122 | 633 | 808 |
| | 48 | 84 | 435 | 541 |
| | 49 | 105 | 614 | 781 |
| | 50 | 75 | 295 | 405 |
| | 51 | 21 | 75 | 99 |
| | 52 | 69 | 295 | 375 |
| Larkana | 1 | 16 | 27 | 51 |
| | 2 | 15 | 27 | 46 |
| | 3 | 15 | 24 | 44 |
| | 4 | 6 | 12 | 26 |
| | 5 | 18 | 44 | 79 |
| | 6 | 21 | 98 | 143 |
| | 7 | 9 | 16 | 29 |
| | 8 | 16 | 96 | 138 |
| | 9 | 12 | 33 | 66 |
| | 10 | 31 | 210 | 372 |
| Mirpur Khas | 1 | 10 | 91 | 117 |
| | 2 | 10 | 154 | 197 |
| | 3 | 13 | 88 | 109 |
| | 4 | 2 | 7 | 9 |
| | 5 | 16 | 134 | 166 |
| | 6 | 1 | 2 | 3 |
| | 7 | 10 | 51 | 66 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 12 | 21 | 42 | 67 | | 8 | 9 | 77 | 100 |
| | 13 | 25 | 83 | 109 | | 9 | 4 | 14 | 18 |
| | 14 | 22 | 38 | 61 | | 10 | 9 | 39 | 49 |
| | 15 | 26 | 51 | 83 | Nawabshah | 1 | 31 | 185 | 234 |
| | 16 | 12 | 17 | 29 | | 2 | 35 | 187 | 243 |
| Hyderabad | 1 | 32 | 148 | 216 | | 3 | 20 | 56 | 81 |
| | 2 | 38 | 187 | 262 | | 4 | 4 | 14 | 19 |
| | 3 | 29 | 95 | 133 | | 5 | 19 | 98 | 126 |
| | 4 | 31 | 105 | 142 | | 6 | 21 | 87 | 117 |
| | 5 | 31 | 139 | 185 | | 7 | 6 | 18 | 25 |
| | 6 | 36 | 165 | 220 | | 8 | 10 | 58 | 78 |
| | 7 | 31 | 112 | 157 | Sukkur | 1 | 25 | 79 | 108 |
| | 8 | 22 | 79 | 109 | | 2 | 24 | 57 | 80 |
| | 9 | 20 | 49 | 70 | | 3 | 19 | 71 | 87 |
| | 10 | 21 | 47 | 72 | | 4 | 23 | 54 | 70 |
| | 11 | 18 | 30 | 49 | | 5 | 10 | 36 | 44 |
| | 12 | 13 | 22 | 37 | | 6 | 6 | 14 | 20 |
| | 13 | 24 | 50 | 74 | | 7 | 13 | 59 | 71 |
| | 14 | 38 | 123 | 173 | | 8 | 8 | 27 | 32 |
| | 15 | 27 | 94 | 128 | | 9 | 7 | 17 | 24 |
| | 16 | 18 | 38 | 58 | | 10 | 7 | 21 | 29 |
| | 17 | 41 | 109 | 154 | | 11 | 12 | 42 | 51 |
| | 18 | 21 | 54 | 77 | | 12 | 21 | 58 | 79 |
| Turbat | 1 | 17 | 98 | 158 | Bannu | 1 | 10 | 27 | 41 |
| | 2 | 8 | 38 | 64 | | 2 | 14 | 32 | 46 |
| | 3 | 7 | 34 | 57 | | 3 | 5 | 10 | 15 |
| | 4 | 13 | 75 | 119 | | 4 | 7 | 12 | 19 |
| | | | | | | 5 | 12 | 26 | 38 |
| | | | | | | 6 | 6 | 11 | 17 |

## 4.4 Types of spots where PWID congregate

The mapping study identified a number of spots which were all categorized into 05 major typologies as illustrated in Figure 4.1.

Figure 4.1: Distribution of PWID by Spot typology, 2016




The highest numbers of spots were street based, where 81% of the PWID congregate. Street based spots mainly comprised of public places, on the street, in parks, vacant grounds, under bridges, outside shops, near markets, at public transportation location. PWID at these spots often congregate together in groups and because of the high price of drugs, pool their money to purchase the drugs. They are most visible in groups with other PWID, with whom they usually inject. Cemeteries or abandoned buildings were the second most frequented spot, reported by 9% of the PWID. Private residence/homes made only 4% of the spots for PWID, thus home based PWID remains a very small proportion of the overall PWIDs in Pakistan. Since mapping focuses more on visible spots and some of the home base PWID might be missed, but triangulation shows that the proportion of home based PWID in Pakistan remains low.

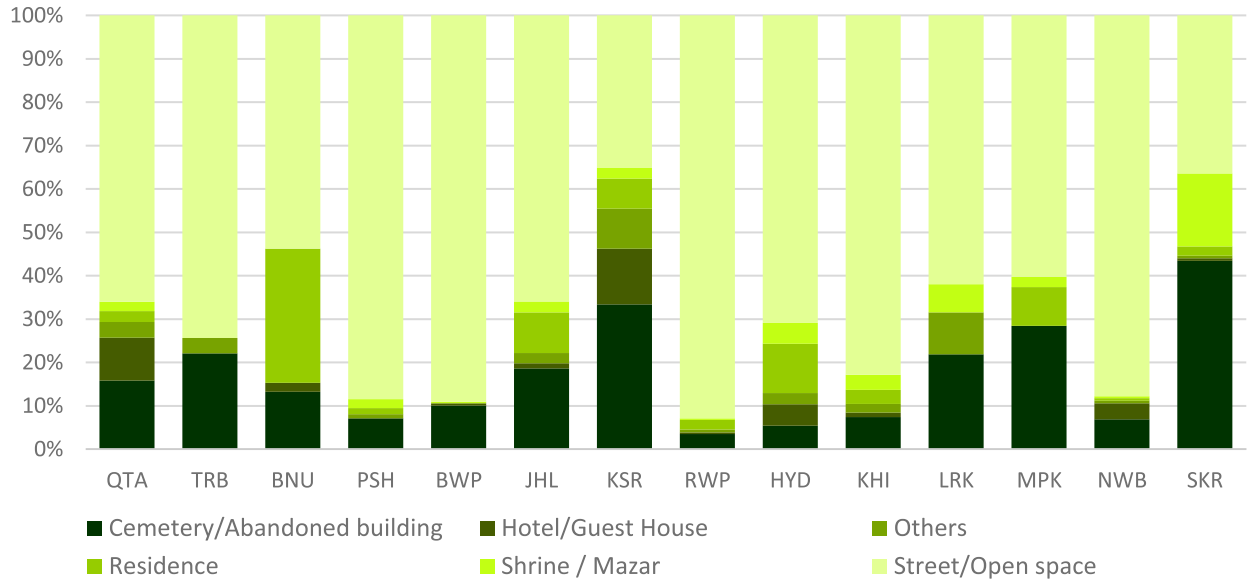
## 4.4 Distribution of spots by typology in each city

Further analysis was conducted to understand the distribution of PWID spots by typology in each city mapped. Results of this analysis are shown in Fig 4.2.

Street spots were the leading type of spots in most of the cities mapped apart from Sukkur and Kasur where they were the second leading type of spot frequented by PWID. Cemeteries or

abandoned buildings was the leading typology of spots in Sukkur and Kasur where PWID congregate. Bannu, Hyderabad and Jehlum reported the largest proportion of home based PWID. (31%, 9.3% and 11.3% respectively; figure 4.2). Among the PWID mapped, 3% reported congregating at Shrines and Mazars, with Sukkur, Larkana and Hyderabad being the leading cities where PWID reported congregating at Shrines and Mazars (16.6%, 6.5% and 4.8%) respectively.

Figure 4.2: Distribution of PWID by Spot typology in each city, 2016




## 4.5 Estimated number of PWID by spot typology in each city

The estimated number of PWID in each city by the typology of spot is provided in Table 4.3. It is to be noted that these numbers are not adjusted for duplication and might be slightly higher than the overall number of PWID for each city.

Table 4.3 Estimated number of PWID by type of spot in all 14 cities mapped.

| City | Type of spot | No of Spots | Min Est | Max Est |
|---|---|---|---|---|
| Quetta | Cemetery/Abandoned building | 15 | 56 | 73 |
| | Hotel/Guest House | 8 | 36 | 45 |
| | Others | 4 | 12 | 17 |
| | Residence | 2 | 9 | 12 |

| | | | | |
|---|---|---|---|---|
| | Shrine / Mazar | 1 | 8 | 9 |
| | Street/Open space | 56 | 218 | 321 |
| Turbat | Cemetery/Abandoned building | 10 | 54 | 88 |
| | Others | 2 | 8 | 15 |
| | Street/Open space | 33 | 183 | 295 |
| Bannu | Cemetery/Abandoned building | 9 | 15 | 24 |
| | Hotel/Guest House | 1 | 2 | 4 |
| | Residence | 15 | 38 | 53 |
| | Street/Open space | 29 | 63 | 95 |
| Peshawar | Cemetery/Abandoned building | 27 | 38 | 75 |
| | Others | 4 | 4 | 11 |
| | Residence | 4 | 7 | 15 |
| | Shrine / Mazar | 6 | 9 | 24 |
| | Street/Open space | 211 | 504 | 902 |
| Bahawalpur | Cemetery/Abandoned building | 61 | 271 | 362 |
| | Hotel/Guest House | 4 | 8 | 17 |
| | Others | 2 | 4 | 7 |
| | Shrine / Mazar | 2 | 6 | 12 |
| | Street/Open space | 505 | 2,302 | 3,288 |
| Jhelum | Cemetery/Abandoned building | 21 | 46 | 70 |
| | Hotel/Guest House | 1 | 3 | 4 |
| | Others | 4 | 6 | 9 |
| | Residence | 8 | 25 | 33 |
| | Shrine / Mazar | 4 | 6 | 10 |
| | Street/Open space | 83 | 162 | 248 |
| Kasoor | Cemetery/Abandoned building | 41 | 252 | 260 |
| | Hotel/Guest House | 21 | 87 | 111 |
| | Others | 13 | 61 | 80 |
| | Residence | 8 | 46 | 61 |
| | Shrine / Mazar | 5 | 17 | 20 |
| | Street/Open space | 60 | 231 | 309 |

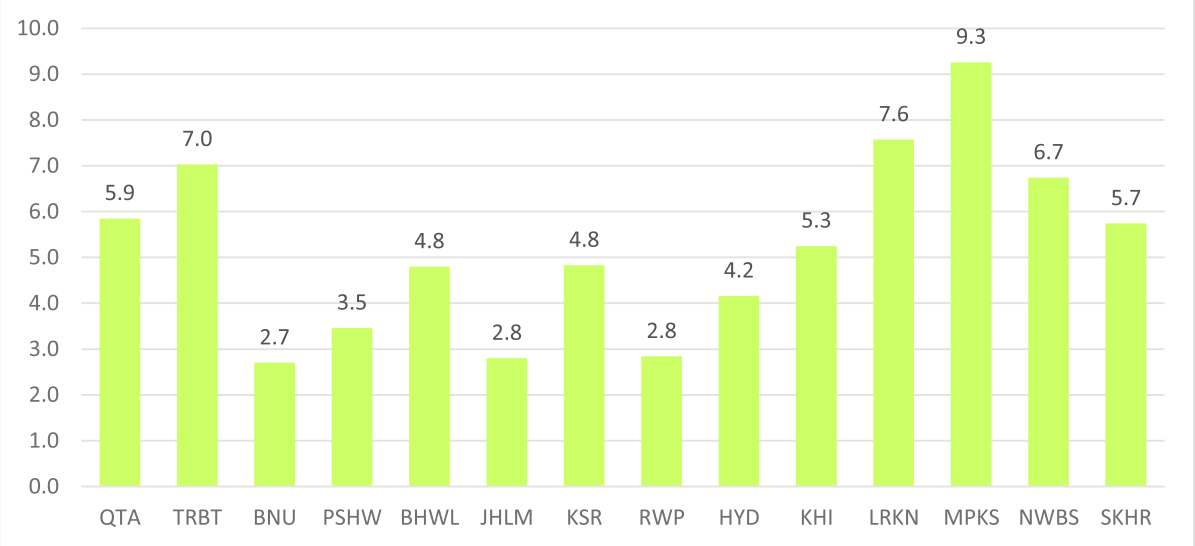
| | | | | |
|---|---|---|---|---|
| Rawalpindi | Cemetery/Abandoned building | 17 | 44 | 62 |
| | Hotel/Guest House | 2 | 4 | 7 |
| | Others | 4 | 8 | 12 |
| | Residence | 6 | 27 | 39 |
| | Shrine / Mazar | 2 | 3 | 8 |
| | Street/Open space | 429 | 1,136 | 1,665 |
| | (blank) | 1 | 3 | 4 |
| Hyderabad | Cemetery/Abandoned building | 27 | 106 | 146 |
| | Hotel/Guest House | 29 | 88 | 139 |
| | Others | 18 | 51 | 72 |
| | Residence | 44 | 227 | 298 |
| | Shrine / Mazar | 28 | 95 | 130 |
| | Street/Open space | 374 | 1,377 | 1,913 |
| Karachi | Cemetery/Abandoned building | 205 | 2,242 | 2,682 |
| | Hotel/Guest House | 48 | 308 | 392 |
| | Others | 85 | 593 | 723 |
| | Residence | 147 | 949 | 1,239 |
| | Shrine / Mazar | 79 | 1,056 | 1,273 |
| | Street/Open space | 4,007 | 23,891 | 31,346 |
| Larkana | Cemetery/Abandoned building | 37 | 127 | 219 |
| | Others | 6 | 53 | 100 |
| | Shrine / Mazar | 5 | 41 | 61 |
| | Street/Open space | 111 | 366 | 614 |
| Mirpur Khas | Cemetery/Abandoned building | 15 | 188 | 236 |
| | Residence | 7 | 59 | 74 |
| | Shrine / Mazar | 1 | 15 | 20 |
| | Street/Open space | 61 | 395 | 504 |
| Nawabshah | Cemetery/Abandoned building | 11 | 49 | 63 |
| | Hotel/Guest House | 5 | 25 | 35 |
| | Others | 1 | 4 | 5 |
| | Residence | 1 | 4 | 6 |

| | | | | |
|---|---|---|---|---|
| | Shrine / Mazar | 1 | 3 | 4 |
| | Street/Open space | 127 | 618 | 810 |
| Sukkur | Cemetery/Abandoned building | 73 | 230 | 302 |
| | Hotel/Guest House | 1 | 3 | 4 |
| | Others | 1 | 3 | 4 |
| | Residence | 4 | 12 | 15 |
| | Shrine / Mazar | 25 | 91 | 115 |
| | Street/Open space | 70 | 194 | 252 |

## 4.6 Spot profiling

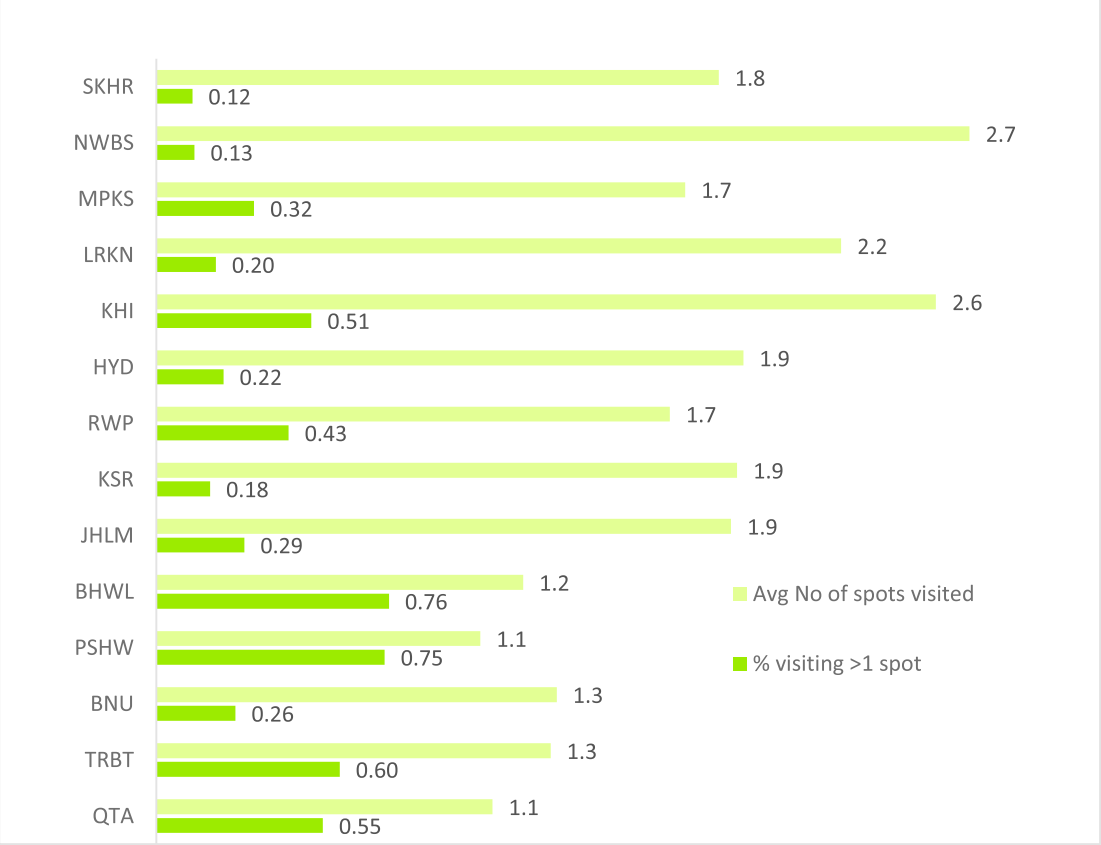
On further analysis of the spots mapped, spot sizes were analysed which are defined by the average number of PWID found at each spot. The mapping process revealed a wide variation in spot sizes by city. The largest spots were reported in Mirpurkhas and Larkana at approximately 9 and 8 PWID per spot respectively. This shows bigger networks of PWIDs and hence presents a much riskier drug injecting environment. Spots in Turbat, Nawabshah, Quetta, Karachi and Sukkur also showed larger networks i.e., spot size of more than 5 PWID per spot. This finding has strong program implications, as larger spots with more PWID indicate a higher risk of needle sharing, an efficient mechanism of HIV spread. Jhelum, Bannu and Rawalpindi had the smallest spot sizes at approximately 3 PWID per spot.

Fig 4.3: Average Spot sizes for PWID in cities mapped



We also looked at the proportion of PWID who inject at more than one spot. This is vital information which is used to adjust the overall estimates, by the number of spots that each PWID goes to. It is important to note that although people who inject drugs know of other spots, they usually inject drugs at the same spot which they basically adhere to. Among those PWIDs who inject at more than one spot, the average number of spots that each PWID injects at was reported to be 1.74 spots. See Fig 4.4 for city wide details

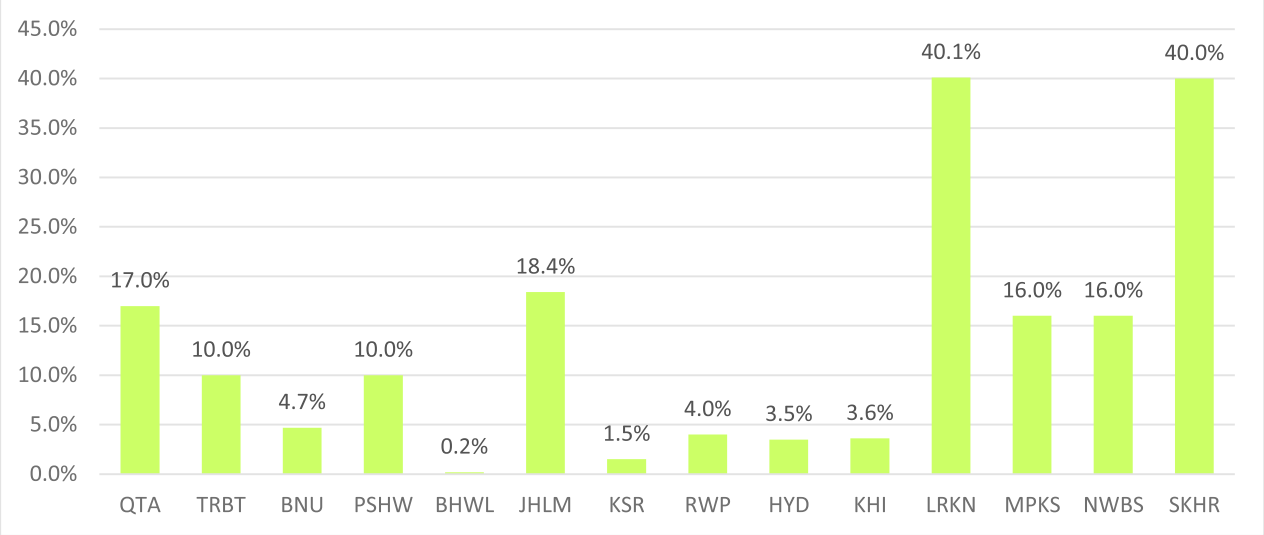
Fig 4.4: Proportion of PWID going to multiple spots and Average No of Spots visited by cities




## 4.7 PWID who don't go to spots

As mentioned earlier as well, injecting drugs is not very hidden and most PWID are visible on the streets or geo-locations. The mapping study tried to approximate the number of PWIDs who do not go to any spots are form the hidden segment of this populations. In most cities mapped, injecting was a fairly visible community characteristic, while in Sukkur and Larkana, a fairly high proportion reported not going to spots at all. See fig 4.5 for detailed results

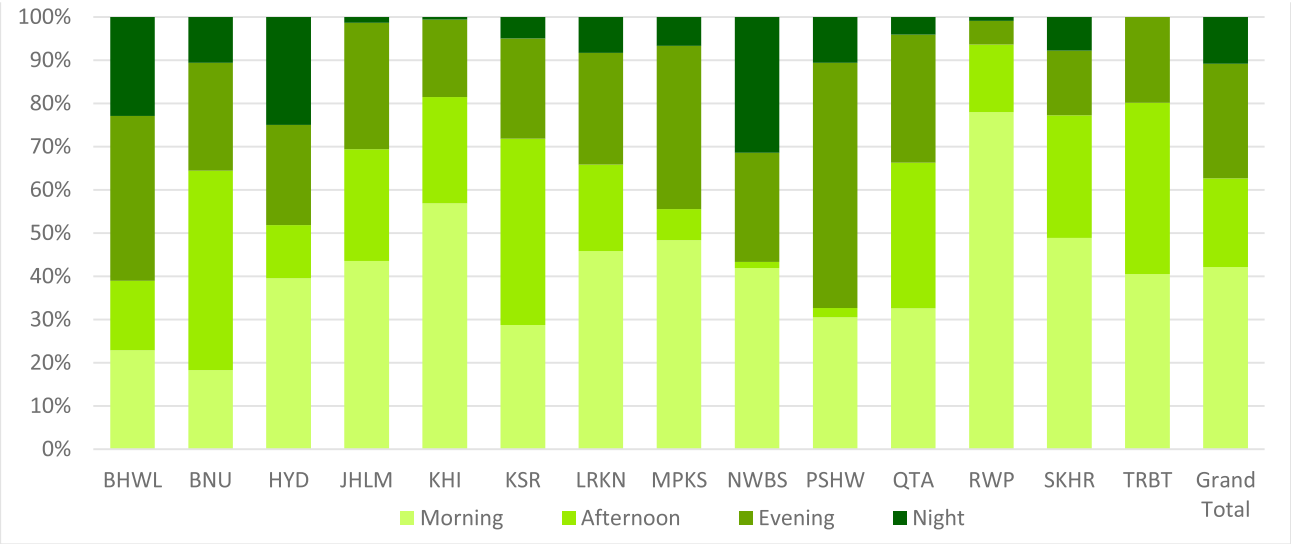
Fig 4.5: Proportion of PWID who do not inject at Physical spots in mapped cities




## 4.8 Timing of drug injecting at Spots

Most of the spots were reported to have cyclic timing, usually 2 to 3 times of the day (in the morning, evening and night) when PWID visit these spots, congregate and inject drugs. A very few spots (less than 10%) had PWID constantly lying at the spot, which are more of the non-functional PWID who have associated with injecting for a very long time. While there were marked differences among cities, most injectors, inject early in the morning and evenings. See Fig 4.6

Fig 4.6 Time of injecting drugs at spots in various cities mapped, 2016



# 5. FEMALE SEX WORKERS (FSW)

For the purpose of this study a female sex worker was defined as "any female who exchanges sex with a man in return for money or benefits, irrespective of site of operation (e.g. street, bars, home, hotel, etc.)". There was a wide range of typologies of FSWs determined through this study based on the type of spots that FSWs congregate and associate with clients. As mentioned earlier, female sex workers were mapped using both geo-mapping approach as well as network mapping.

## 5.1 Estimated Number of FSWS

Female sex workers (FSWs) form one the largest key populations with an average estimated number of 64,829 (range 70,428 to 57,734) SWs spread over 4,514 spots in Pakistan. Based on these spots the average number of FSWs frequenting on each spot was calculated to be 5.4 which shows that the spots are large and there are fairly high number of FSWs at each spot.

Karachi has the highest number of FSWs (avg=25,191) which made 39% of the total sex workers in the cities mapped. Karachi was followed by Sheikhupura (avg=6,252) and Bahawalpur (avg=6,201) which together made approx. 19% of female sex work in the cities mapped. It is important to note that some of the cities (Lahore, Faisalabad, Multan and Sargodha; all belonging to Punjab), that are known to have high FSW numbers were not included in this study.

Table 5.1: Estimated number of Female Sex workers in Pakistan, 2016

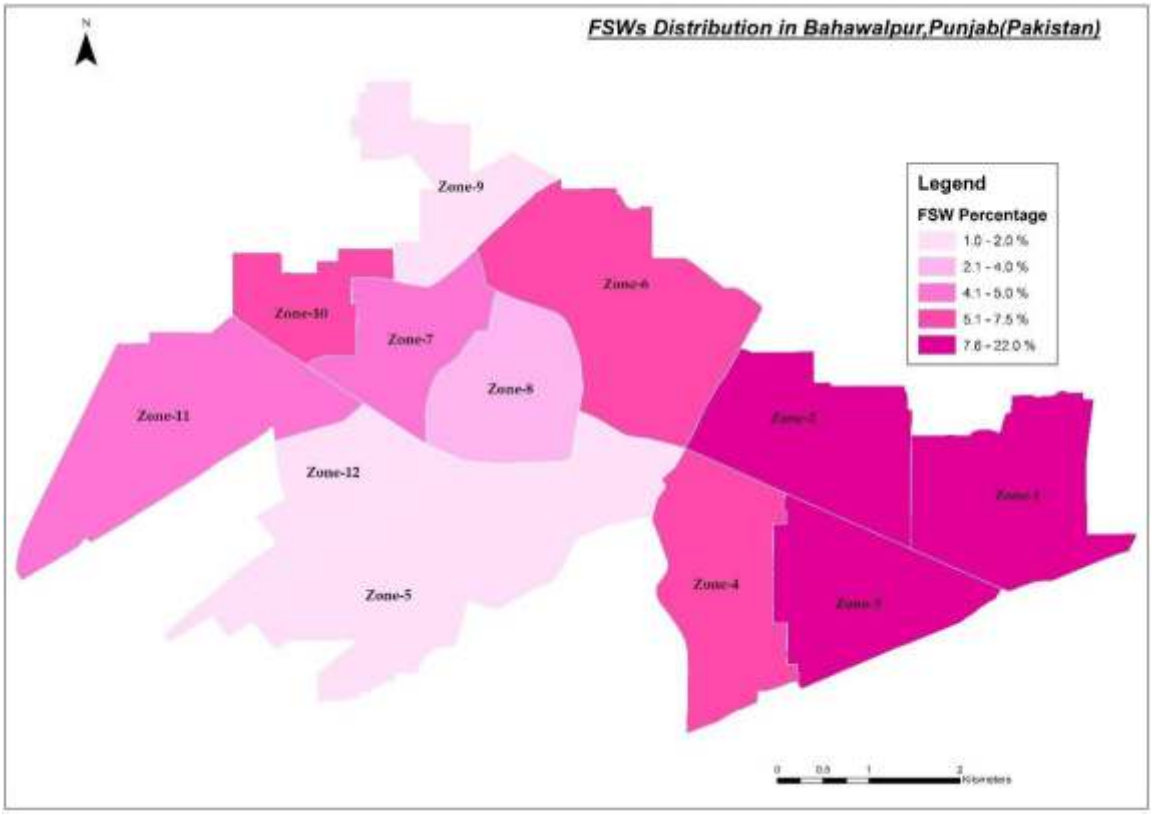
| City | Average Estimate | Minimum Estimate | Maximum Estimate | % Dist |
|---|---|---|---|---|
| Bahawalpur | 6,201 | 5,522 | 6,737 | 9.6% |
| Bannu | 192 | 171 | 209 | 0.3% |
| DG Khan | 1,349 | 1,201 | 1,466 | 2.1% |
| Gujranwala | 4,069 | 3,624 | 4,420 | 6.3% |
| Gujrat | 317 | 282 | 344 | 0.5% |
| Hyderabad | 4,426 | 3,942 | 4,808 | 6.8% |
| Karachi | 25,191 | 22,434 | 27,367 | 38.9% |
| Kasoor | 1,739 | 1,549 | 1,889 | 2.7% |

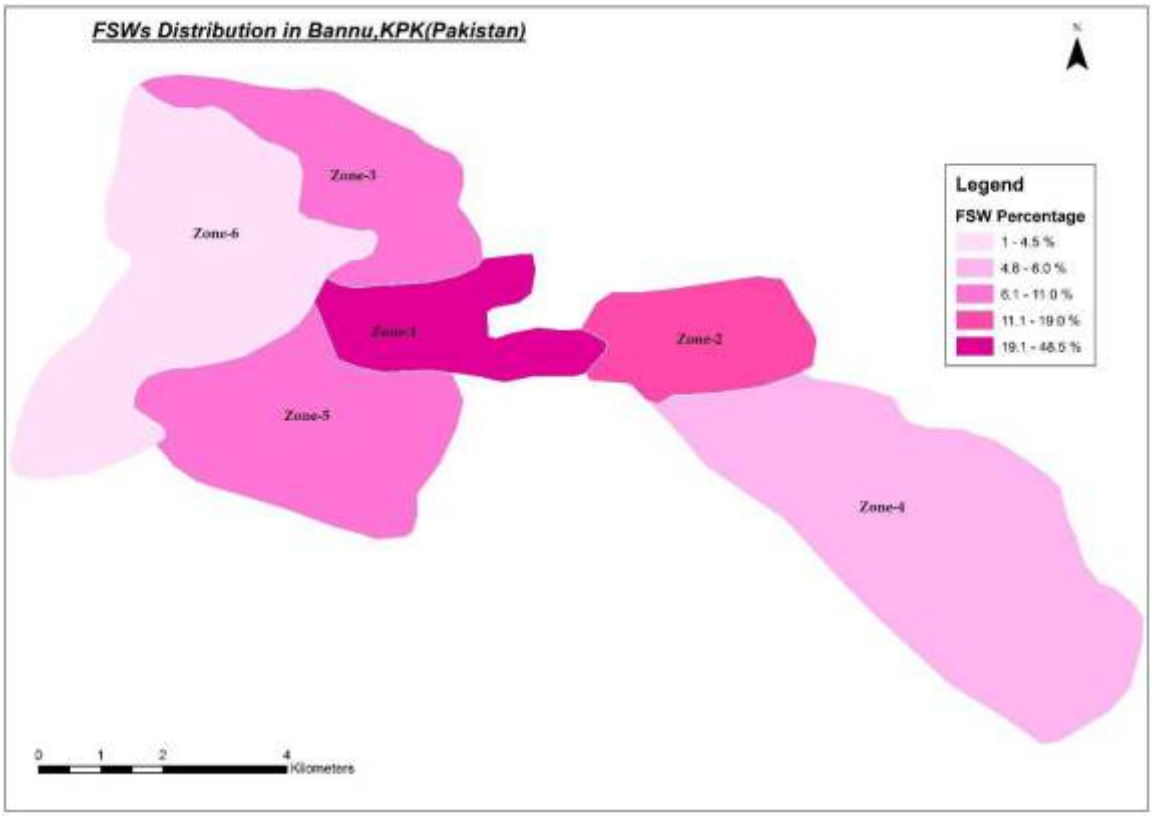
| | | | | |
|---|---|---|---|---|
| Larkana | 4,593 | 4,090 | 4,990 | 7.1% |
| Mirpur Khas | 2,084 | 1,856 | 2,264 | 3.2% |
| Nawabshah | 1,690 | 1,505 | 1,836 | 2.6% |
| Peshawar | 765 | 681 | 831 | 1.2% |
| Quetta | 4,121 | 3,670 | 4,477 | 6.4% |
| Rawalpindi | 2,465 | 2,195 | 2,678 | 3.8% |
| Sheikhupura | 6,252 | 5,568 | 6,792 | 9.6% |
| Sialkot | 2,031 | 1,809 | 2,206 | 3.1% |
| Sukkhur | 3,307 | 2,945 | 3,593 | 5.1% |
| Turbat | 523 | 466 | 568 | 0.8% |
| **Grand Total** | **64,829** | **57,734** | **70,428** | |

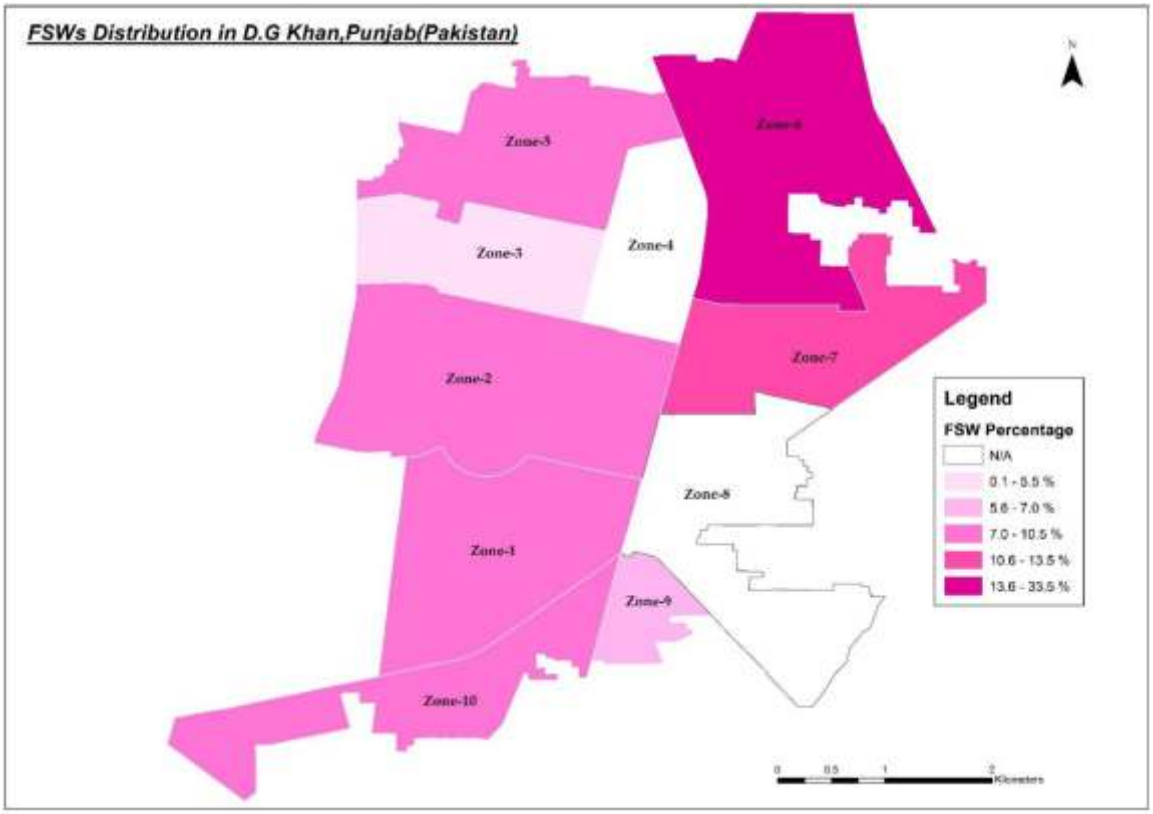
## 5.2 Zone wise distribution of FSWS in each city

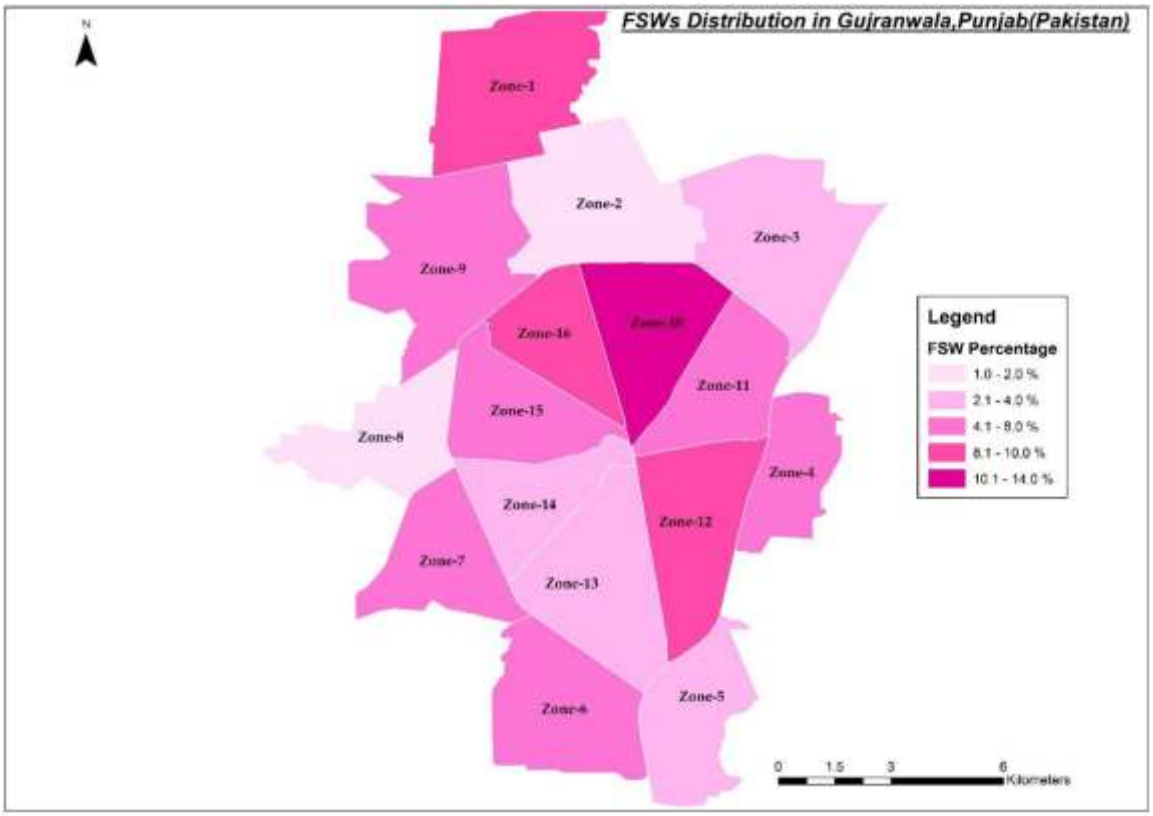
Distribution maps, which show the spread of FSWs in each city are presented in this section. The higher concentration of sex work in a geography is shown by darker colors.

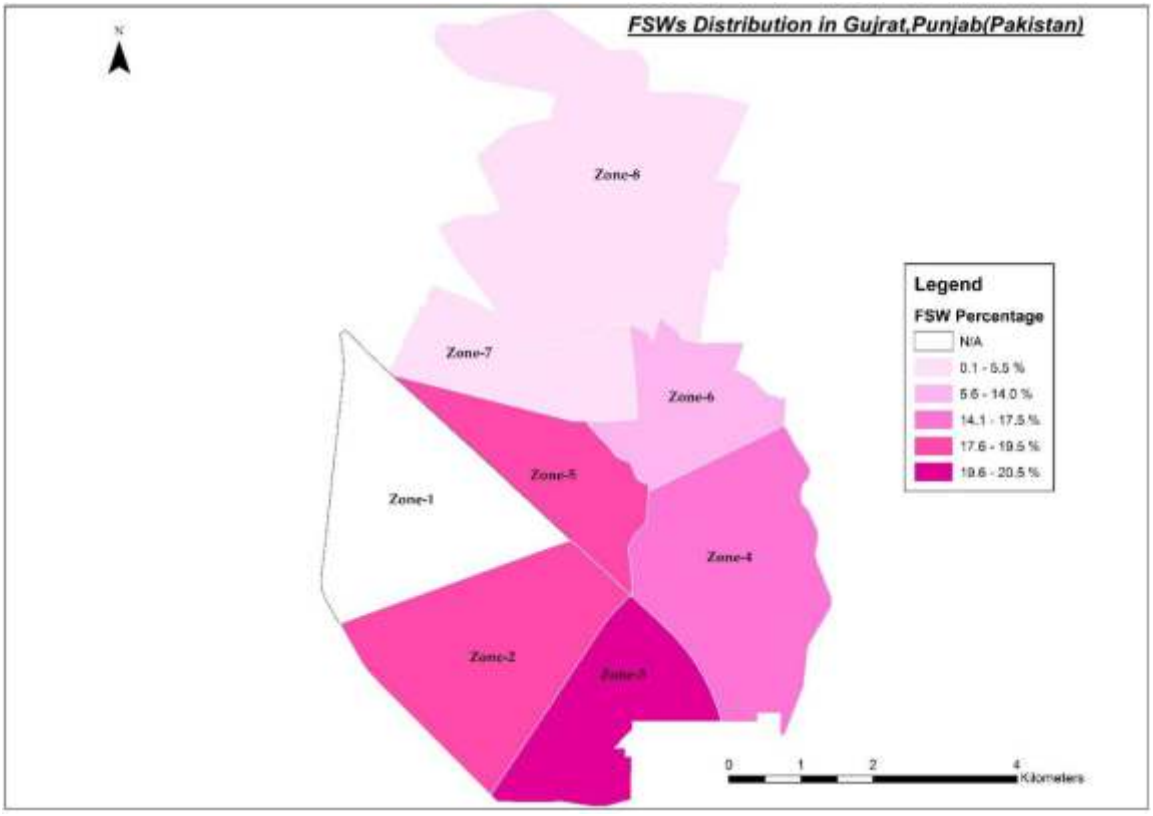
Fig 5.1: Distribution of FSWs by Zones in all cities mapped, 2016

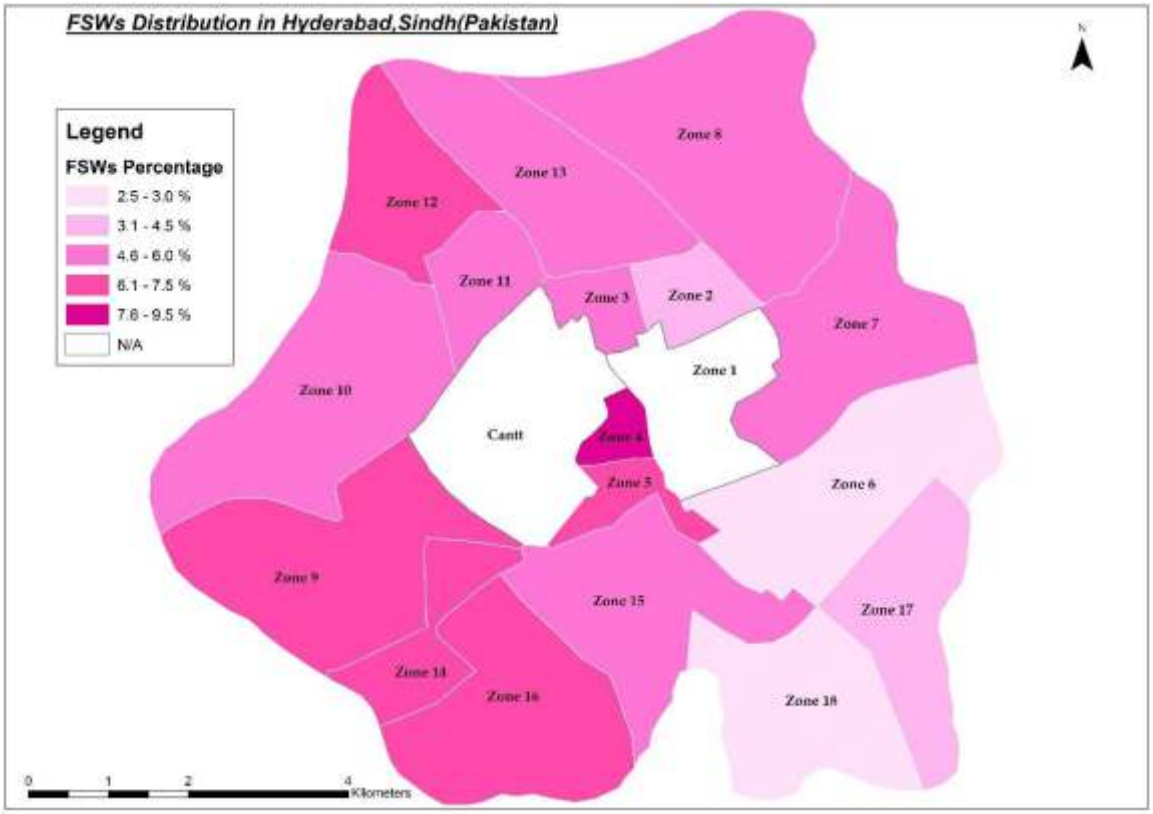


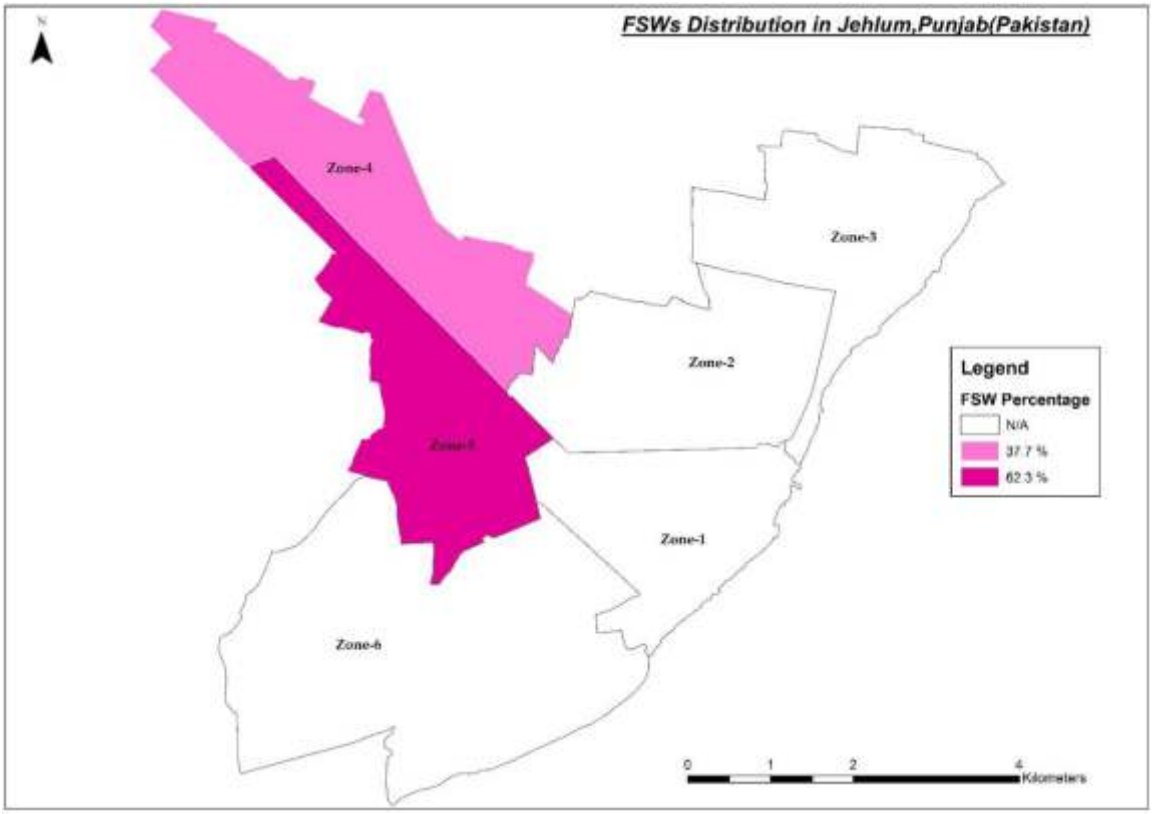

FSWs Distribution in Bannu,KPK(Pakistan)
N
Zone-3
Zone-6
Zone-1
Zone-2
Zone-5
Zone-4
Legend
FSW Percentage
1 - 4.5 %
4.6 - 6.0 %
6.1 - 11.0 %
11.1 - 19.0 %
19.1 - 46.5 %
0 1 2 4
Kilometers

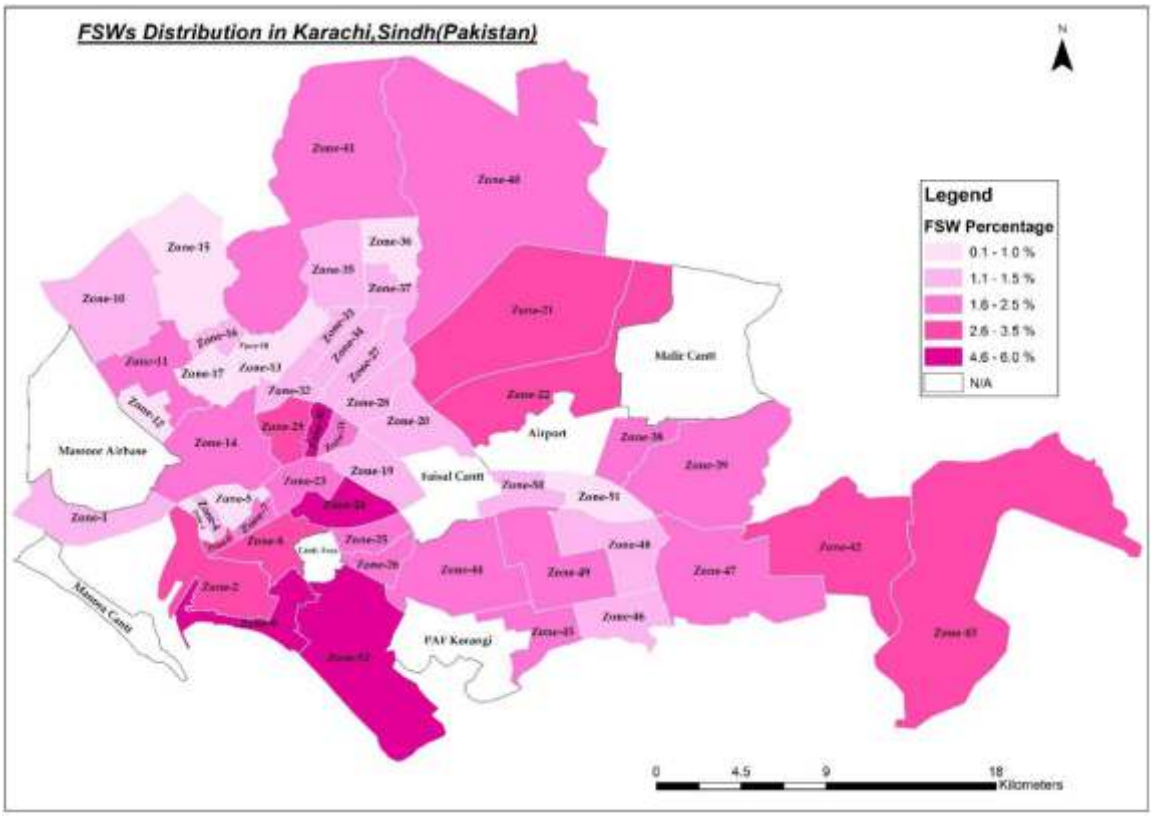

FSWs Distribution in D.G Khan,Punjab(Pakistan)
N
Zone-5
Zone-6
Zone-3
Zone-4
Zone-7
Zone-2
Zone-8
Zone-1
Zone-9
Zone-10
Legend
FSW Percentage
N/A
0.1 - 5.5 %
5.6 - 7.0 %
7.0 - 10.5 %
10.6 - 13.5 %
13.6 - 33.5 %
0 0.5 1 2
Kilometers

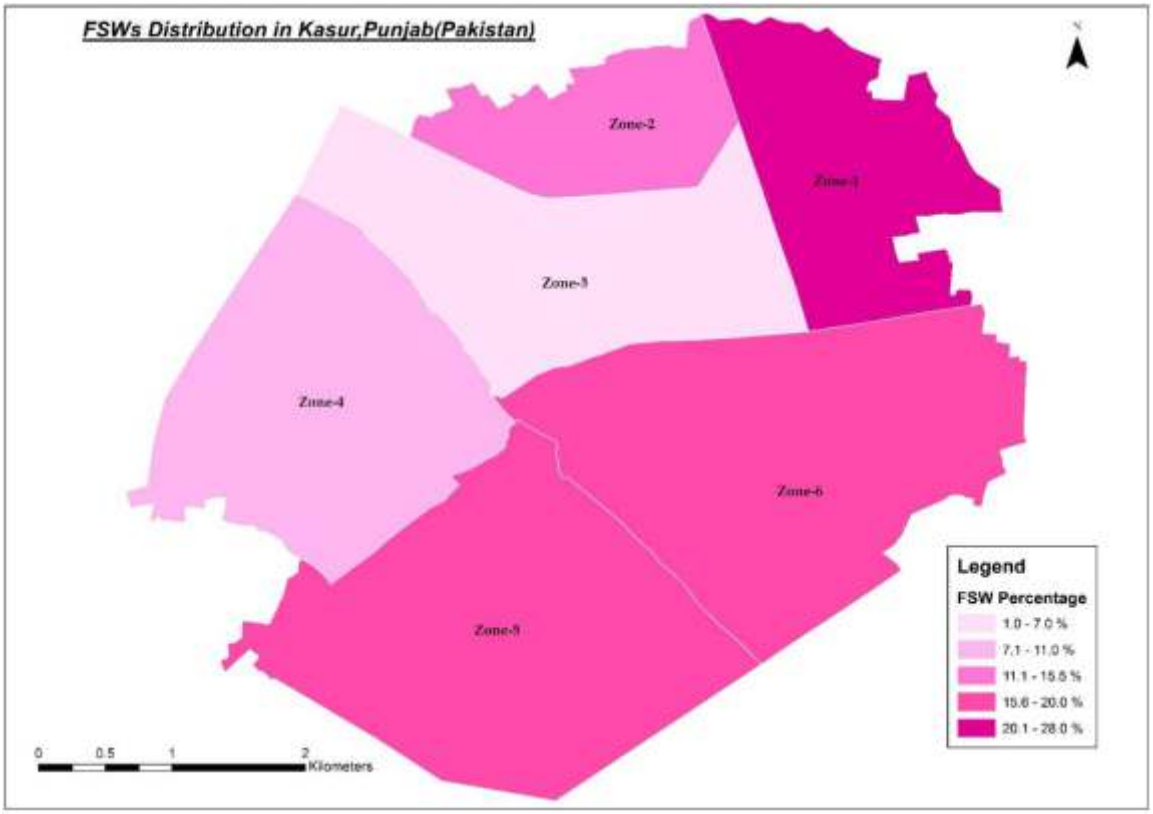

FSWs Distribution in Gujranwala,Punjab(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-9
Zone-10
Zone-11
Zone-15
Zone-8
Zone-4
Zone-14
Zone-12
Zone-7
Zone-13
Zone-6
Zone-5
Legend
FSW Percentage
1.0 - 2.0 %
2.1 - 4.0 %
4.1 - 8.0 %
8.1 - 10.0 %
10.1 - 14.0 %
0 1.5 3 6
Kilometers

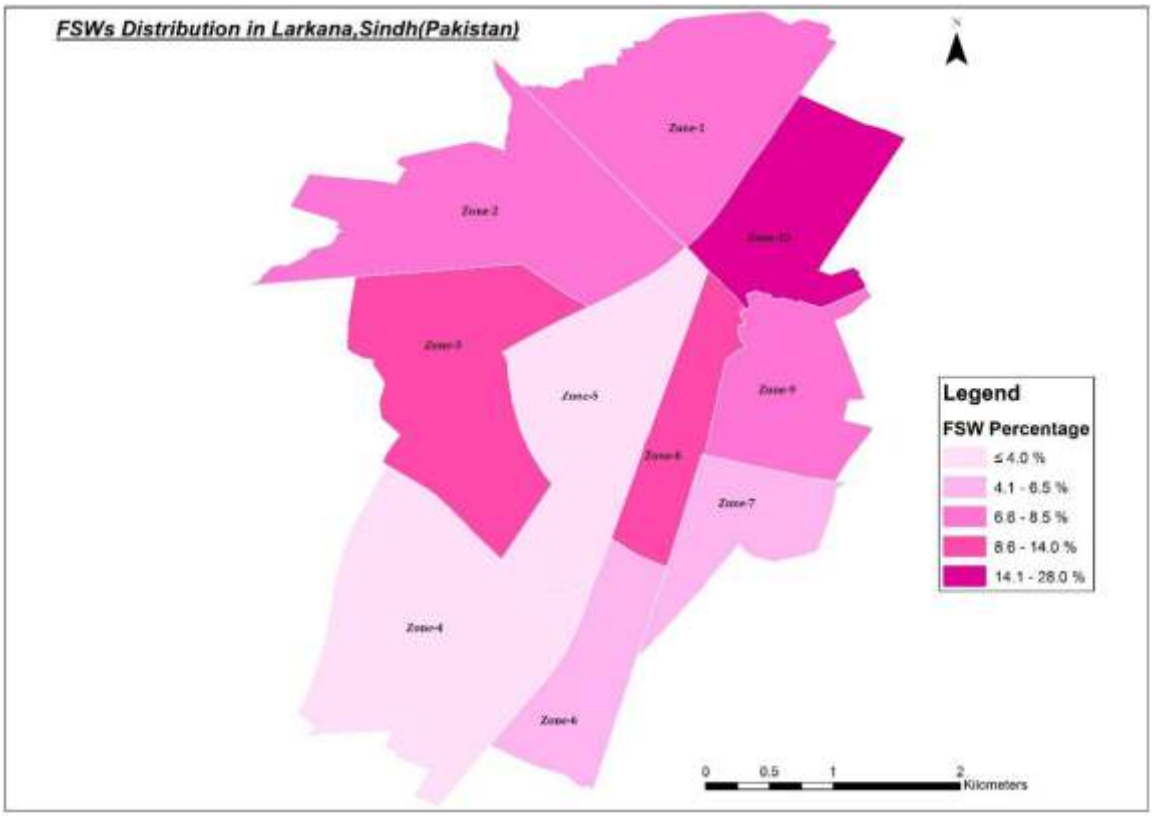

FSWs Distribution in Gujrat,Punjab(Pakistan)
N
Zone-8
Zone-7
Zone-6
Zone-5
Zone-1
Zone-4
Zone-2
Zone-3
Legend
FSW Percentage
N/A
0.1 - 5.5 %
5.6 - 14.0 %
14.1 - 17.5 %
17.6 - 19.5 %
19.6 - 20.5 %
0 1 2 4
Kilometers

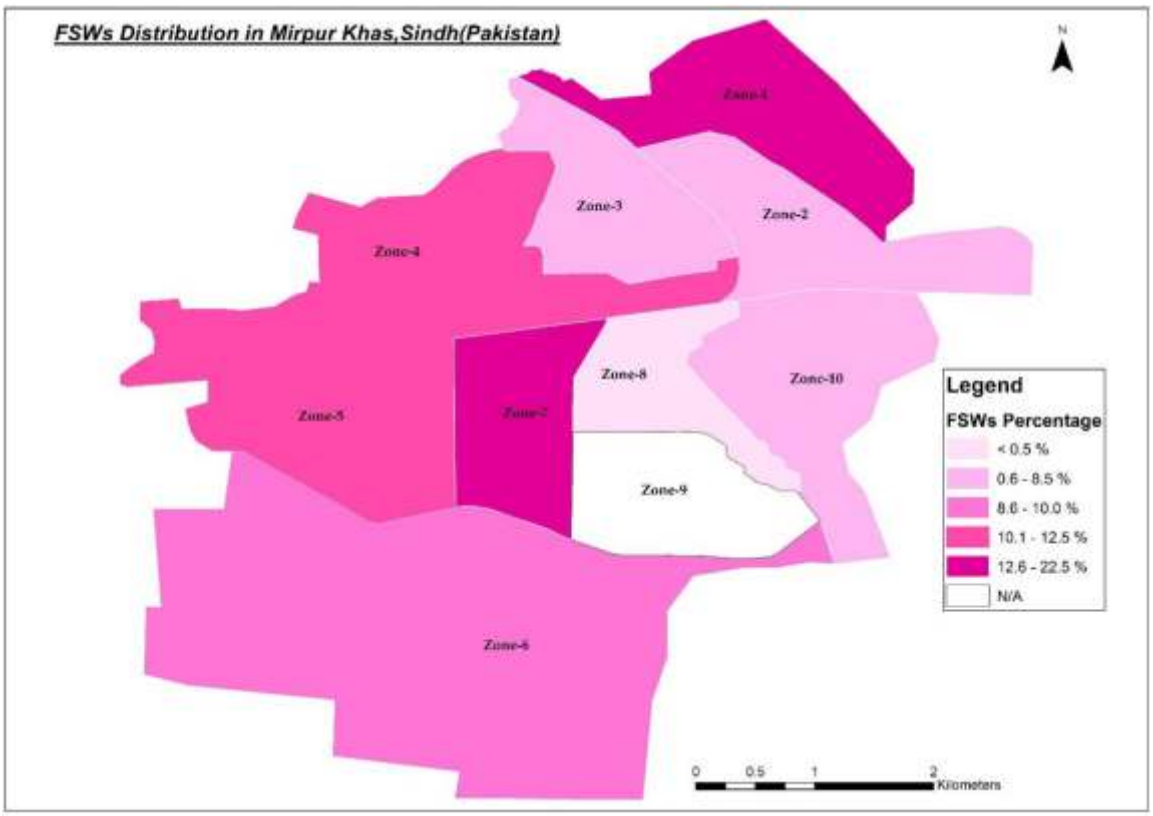

FSWs Distribution in Hyderabad,Sindh(Pakistan)
N
Legend
FSWs Percentage
2.5 - 3.0 %
3.1 - 4.5 %
4.6 - 6.0 %
6.1 - 7.5 %
7.6 - 9.5 %
N/A
Zone 8
Zone 13
Zone 12
Zone 11
Zone 3
Zone 2
Zone 7
Zone 1
Zone 10
Cantt
Zone 4
Zone 5
Zone 6
Zone 9
Zone 15
Zone 17
Zone 14
Zone 16
Zone 18
0
1
2
4
Kilometers

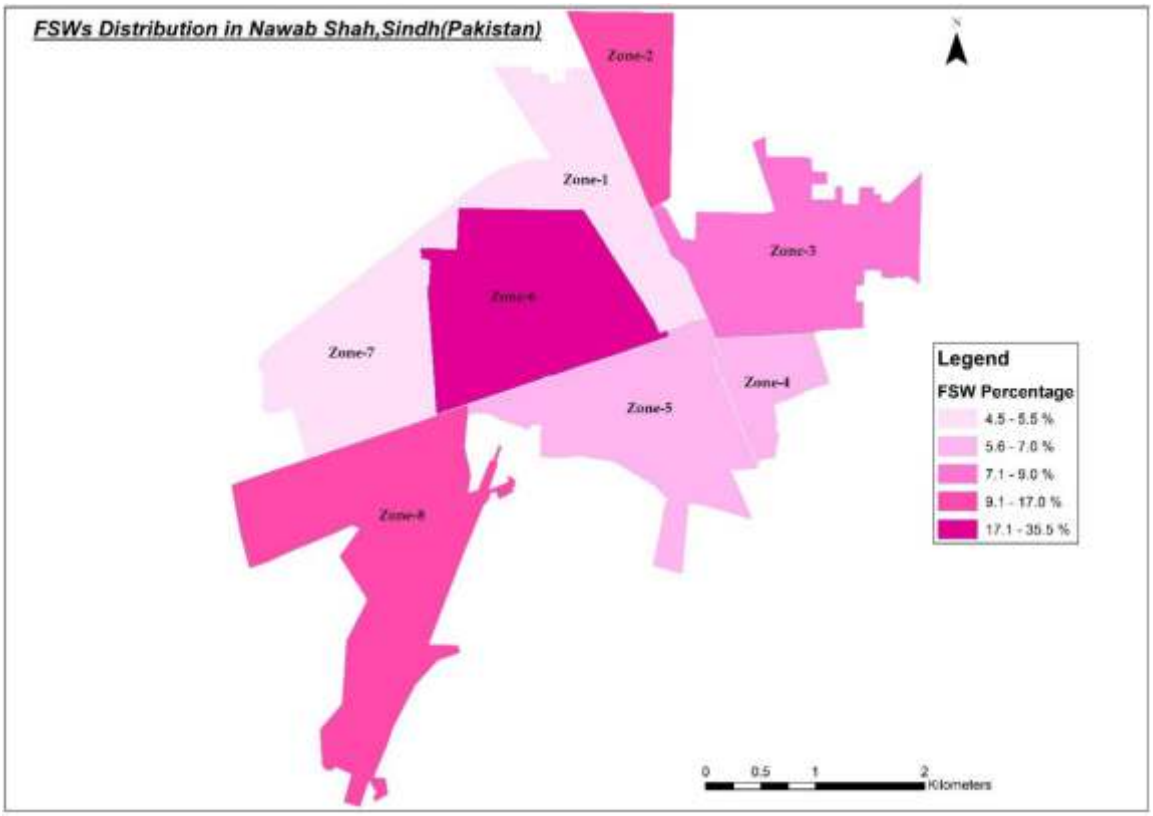

FSWs Distribution in Jehlum,Punjab(Pakistan)
N
Zone-4
Zone-3
Zone-2
Zone-5
Zone-1
Zone-6
Legend
FSW Percentage
N/A
37.7 %
62.3 %
0
1
2
4
Kilometers

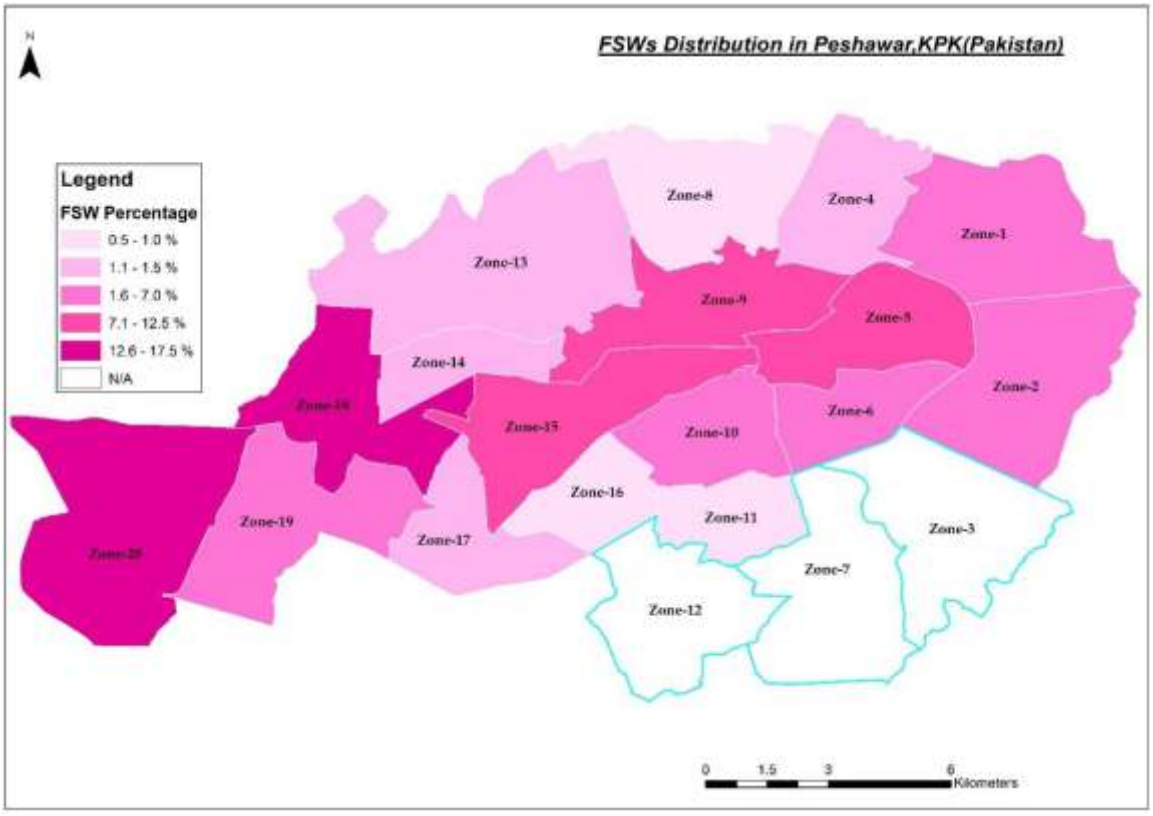

FSWs Distribution in Karachi,Sindh(Pakistan)
N
Legend
FSW Percentage
0.1 - 1.0 %
1.1 - 1.5 %
1.6 - 2.5 %
2.6 - 3.5 %
4.5 - 6.0 %
N/A
Zone-41
Zone-40
Zone-15
Zone-36
Zone-35
Zone-37
Zone-10
Zone-21
Malir Cantt
Zone-11
Zone-17
Zone-53
Zone-32
Zone-22
Airport
Zone-38
Zone-39
Mauripur Airbase
Zone-14
Zone-20
Zone-23
Zone-19
Faisal Cantt
Zone-58
Zone-51
Zone-1
Zone-5
Zone-6
Zone-25
Zone-48
Zone-42
Zone-2
Zone-44
Zone-49
Zone-47
Zone-46
Zone-45
PAF Korangi
Zone-43
Zone-52
0
4.5
9
18
Kilometers

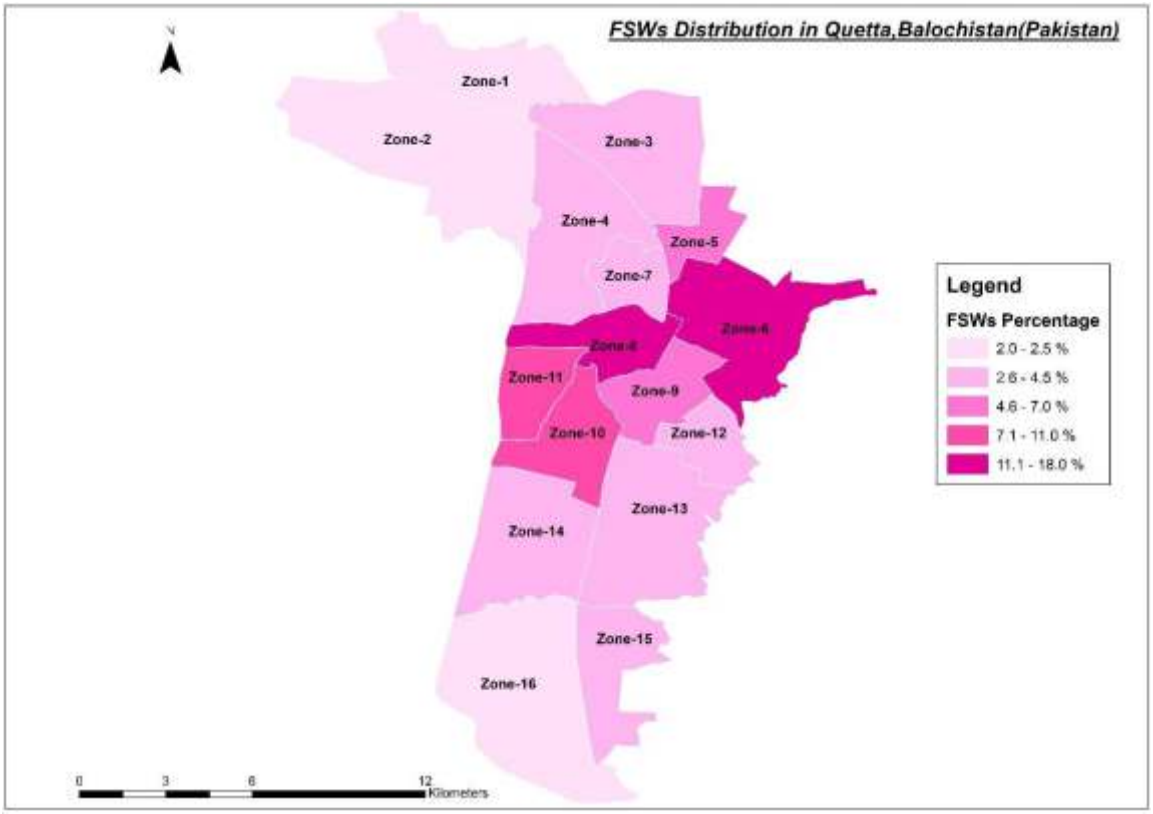

FSWs Distribution in Kasur,Punjab(Pakistan)
N
Zone-2
Zone-1
Zone-3
Zone-4
Zone-6
Zone-5
Legend
FSW Percentage
1.0 - 7.0 %
7.1 - 11.0 %
11.1 - 15.5 %
15.6 - 20.0 %
20.1 - 28.0 %
0
0.5
1
2
Kilometers

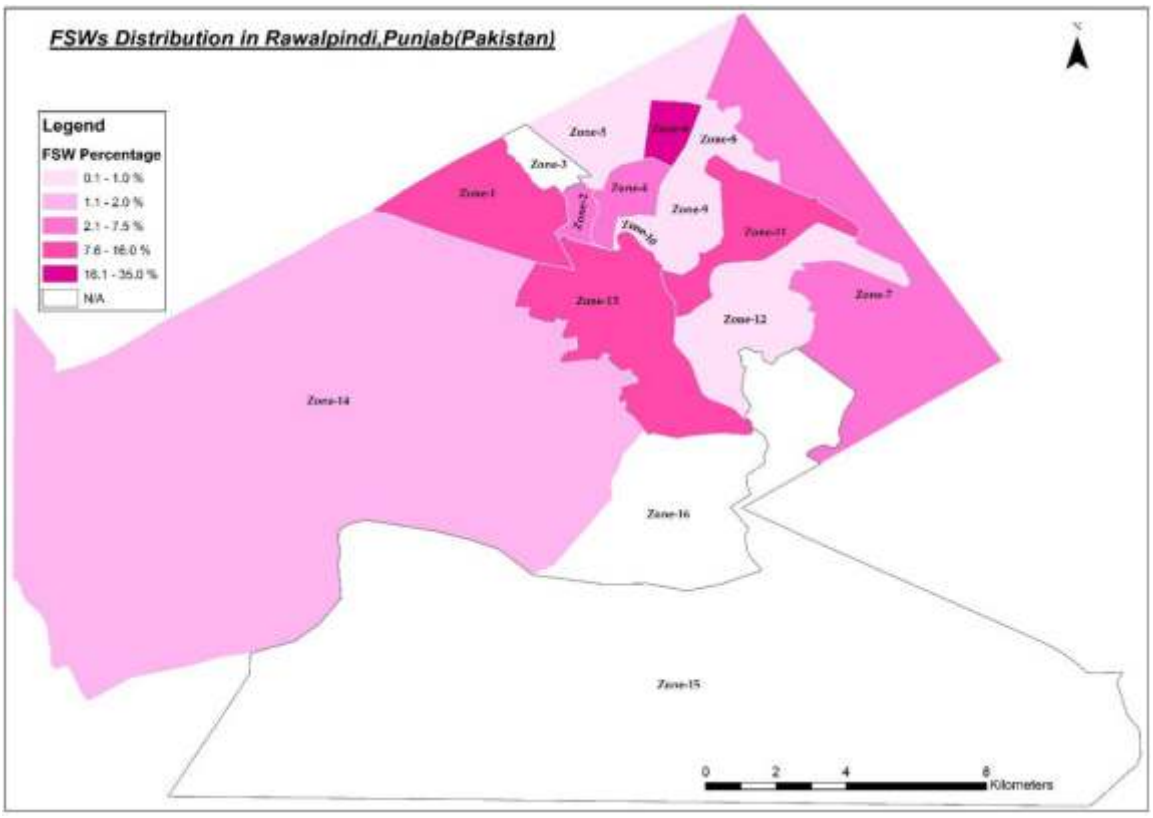

FSWs Distribution in Larkana,Sindh(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Legend
FSW Percentage
≤ 4.0 %
4.1 - 6.5 %
6.6 - 8.5 %
8.6 - 14.0 %
14.1 - 28.0 %
0 0.5 1 2
Kilometers

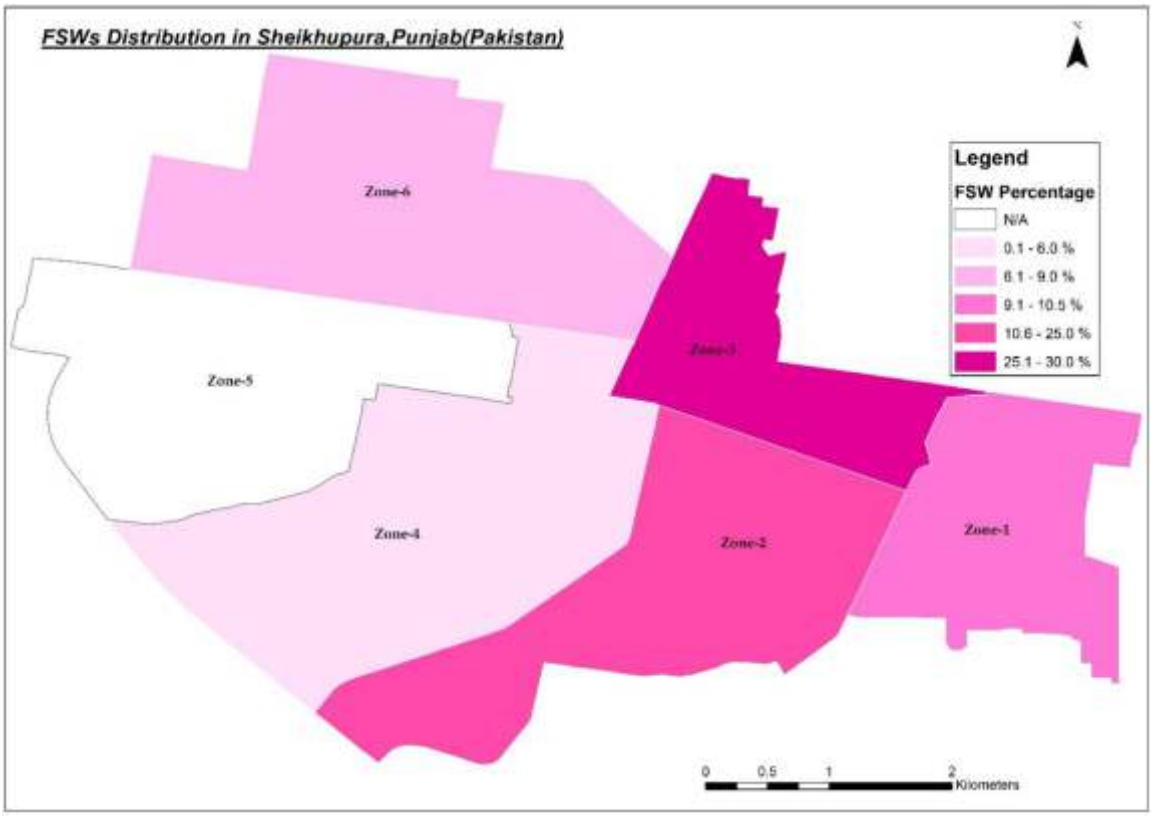

FSWs Distribution in Mirpur Khas,Sindh(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Legend
FSWs Percentage
< 0.5 %
0.6 - 8.5 %
8.6 - 10.0 %
10.1 - 12.5 %
12.6 - 22.5 %
N/A
0 0.5 1 2
Kilometers

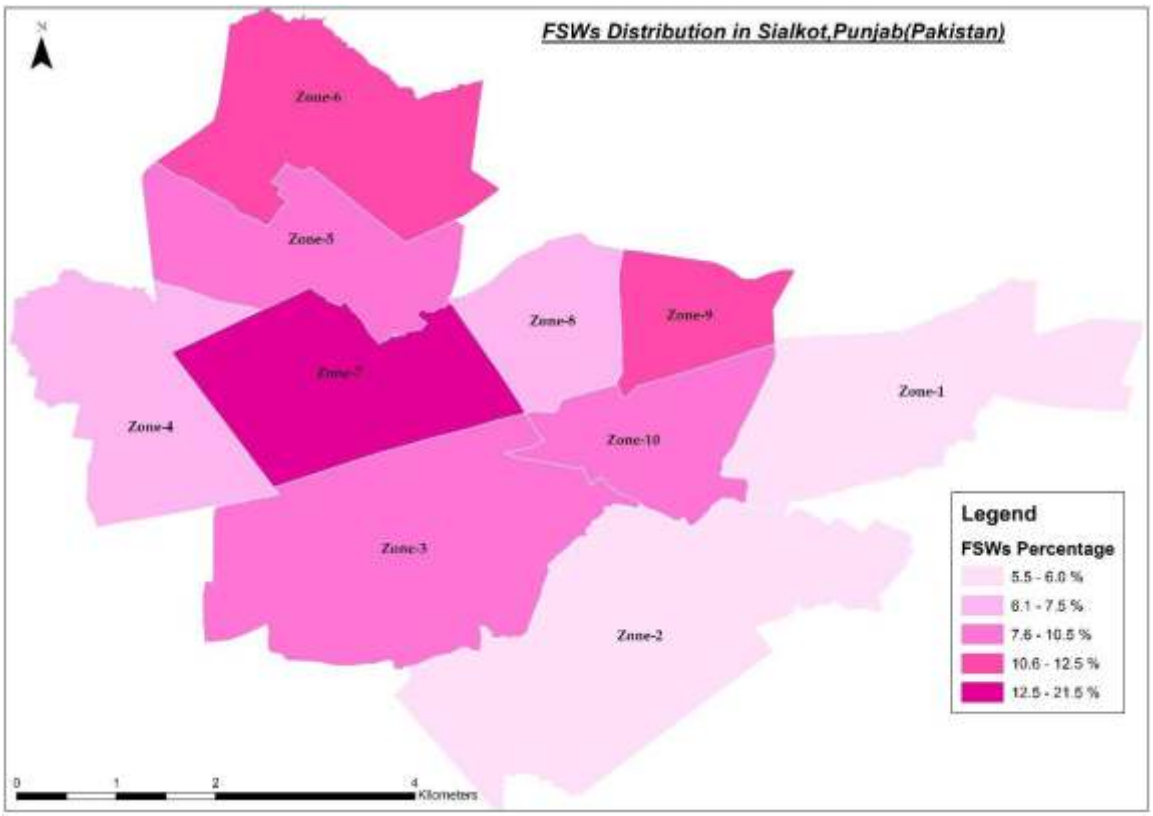

FSWs Distribution in Nawab Shah,Sindh(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Legend
FSW Percentage
4.5 - 5.5 %
5.6 - 7.0 %
7.1 - 9.0 %
9.1 - 17.0 %
17.1 - 35.5 %
0 0.5 1 2
Kilometers

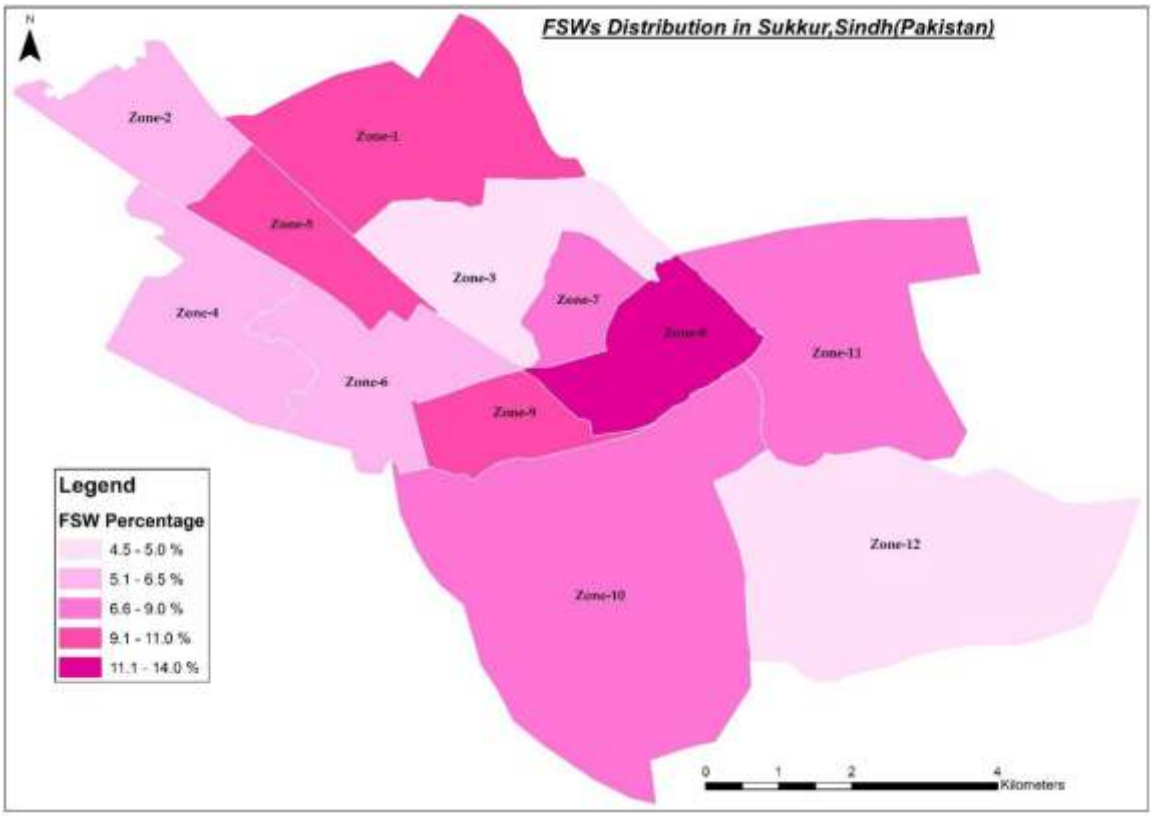

FSWs Distribution in Peshawar,KPK(Pakistan)
N
Legend
FSW Percentage
0.5 - 1.0 %
1.1 - 1.5 %
1.6 - 7.0 %
7.1 - 12.5 %
12.6 - 17.5 %
N/A
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
Zone-17
Zone-18
Zone-19
Zone-20
0 1.5 3 6
Kilometers


FSWs Distribution in Quetta,Balochistan(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-7
Zone-6
Zone-8
Zone-11
Zone-9
Zone-10
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
Legend
FSWs Percentage
2.0 - 2.5 %
2.6 - 4.5 %
4.6 - 7.0 %
7.1 - 11.0 %
11.1 - 18.0 %
0
3
6
12
Kilometers


FSWs Distribution in Rawalpindi,Punjab(Pakistan)
N
Legend
FSW Percentage
0.1 - 1.0 %
1.1 - 2.0 %
2.1 - 7.5 %
7.6 - 16.0 %
16.1 - 35.0 %
N/A
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-9
Zone-11
Zone-12
Zone-13
Zone-14
Zone-16
Zone-15
0
2
4
8
Kilometers


FSWs Distribution in Sheikhupura,Punjab(Pakistan)
N
Legend
FSW Percentage
N/A
0.1 - 6.0 %
6.1 - 9.0 %
9.1 - 10.5 %
10.6 - 25.0 %
25.1 - 30.0 %
Zone-6
Zone-5
Zone-3
Zone-4
Zone-2
Zone-1
0 0.5 1 2
Kilometers


FSWs Distribution in Sialkot,Punjab(Pakistan)
N
Zone-6
Zone-5
Zone-8
Zone-9
Zone-7
Zone-4
Zone-10
Zone-1
Zone-3
Zone-2
Legend
FSWs Percentage
5.5 - 6.0 %
6.1 - 7.5 %
7.6 - 10.5 %
10.6 - 12.5 %
12.5 - 21.5 %
0 1 2 4
Kilometers


FSWs Distribution in Sukkur,Sindh(Pakistan)
N
Zone-2
Zone-1
Zone-5
Zone-3
Zone-7
Zone-8
Zone-11
Zone-4
Zone-6
Zone-9
Zone-12
Zone-10
Legend
FSW Percentage
4.5 - 5.0 %
5.1 - 6.5 %
6.6 - 9.0 %
9.1 - 11.0 %
11.1 - 14.0 %
0 1 2 4
Kilometers

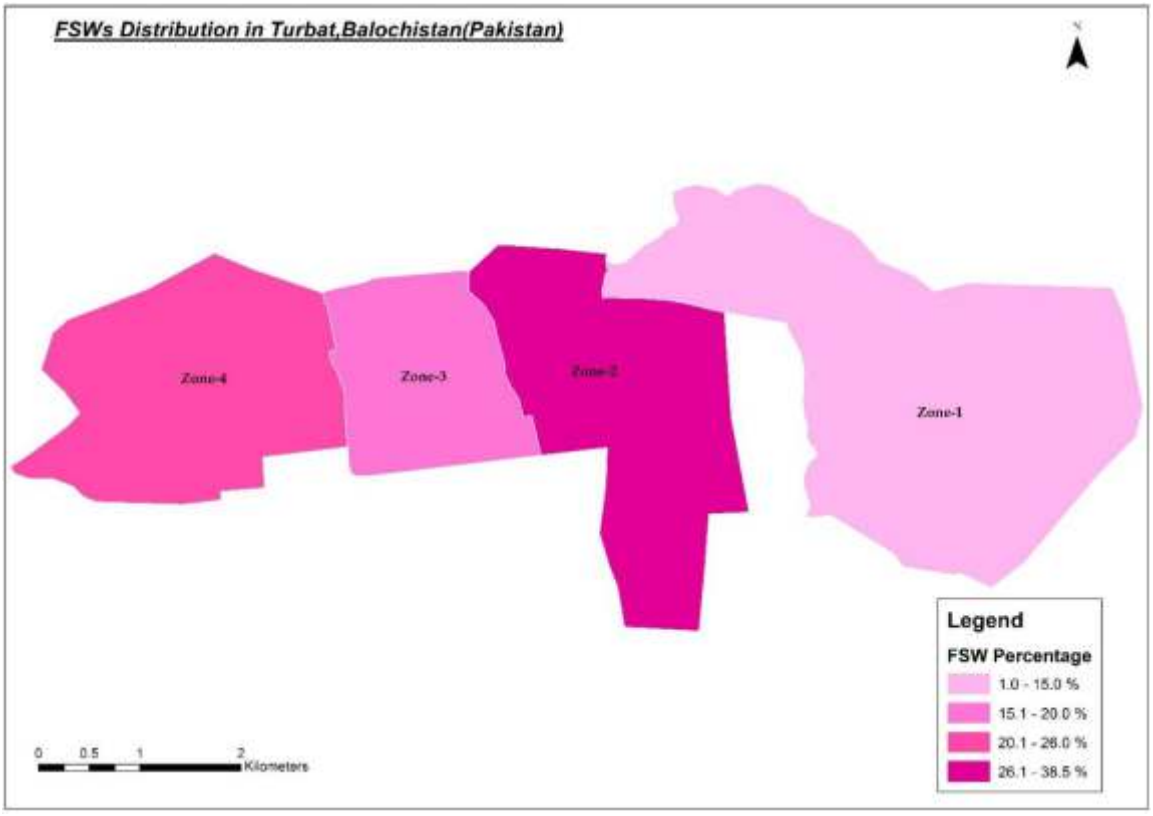

FSWs Distribution in Turbat,Balochistan(Pakistan)
N
Zone-4
Zone-3
Zone-2
Zone-1
Legend
FSW Percentage
1.0 - 15.0 %
15.1 - 20.0 %
20.1 - 26.0 %
26.1 - 38.5 %
0 0.5 1 2
Kilometers

Table 5.2: Estimated number of FSWs by Zone in each city, 2016

| City | Zone | Min | Max | Spots |
|---|---|---|---|---|
| Bahawalpur | 1 | 215 | 328 | 49 |
| | 2 | 163 | 252 | 39 |
| | 3 | 207 | 353 | 56 |
| | 4 | 85 | 107 | 21 |
| | 5 | 14 | 22 | 5 |
| | 6 | 83 | 105 | 18 |
| | 7 | 46 | 66 | 15 |
| | 8 | 42 | 53 | 8 |
| | 9 | 21 | 28 | 6 |
| | 10 | 73 | 97 | 21 |
| | 11 | 52 | 75 | 15 |
| | 12 | 17 | 25 | 6 |
| Dera Ghazi Khan | 1 | 9 | 12 | 3 |
| | 2 | 9 | 12 | 5 |
| | 3 | 4 | 7 | 2 |
| | 5 | 8 | 11 | 3 |
| | 6 | 30 | 38 | 9 |
| | 7 | 10 | 17 | 5 |
| | 9 | 5 | 9 | 2 |
| | 10 | 8 | 13 | 2 |
| Gujranwala | 1 | 47 | 62 | 14 |
| | 2 | 5 | 7 | 2 |
| | 3 | 14 | 18 | 4 |
| | 4 | 37 | 48 | 10 |
| | 5 | 20 | 26 | 5 |
| | 6 | 33 | 45 | 9 |
| | 7 | 33 | 44 | 10 |
| | 8 | 10 | 13 | 3 |
| | 9 | 26 | 34 | 8 |
| | 10 | 66 | 92 | 21 |
| | 11 | 37 | 53 | 13 |

| City | Zone | Min | Max | Spots |
|---|---|---|---|---|
| Peshawar | 1 | 42 | 73 | 15 |
| | 2 | 23 | 40 | 9 |
| | 4 | 10 | 18 | 4 |
| | 5 | 58 | 113 | 27 |
| | 6 | 32 | 43 | 9 |
| | 8 | 5 | 8 | 2 |
| | 9 | 77 | 130 | 25 |
| | 10 | 31 | 46 | 11 |
| | 11 | 3 | 5 | 2 |
| | 13 | 8 | 15 | 3 |
| | 14 | 9 | 17 | 4 |
| | 15 | 57 | 91 | 19 |
| | 16 | 6 | 10 | 2 |
| | 17 | 11 | 13 | 1 |
| | 18 | 122 | 166 | 26 |
| | 19 | 44 | 55 | 7 |
| | 20 | 111 | 142 | 24 |
| Quetta | 1 | 76 | 92 | 12 |
| | 2 | 50 | 68 | 14 |
| | 3 | 98 | 133 | 24 |
| | 4 | 128 | 171 | 24 |
| | 5 | 146 | 200 | 34 |
| | 6 | 447 | 701 | 78 |
| | 7 | 99 | 135 | 25 |
| | 8 | 381 | 506 | 41 |
| | 9 | 183 | 253 | 43 |
| | 10 | 258 | 338 | 43 |
| | 11 | 304 | 399 | 56 |
| | 12 | 101 | 134 | 17 |
| | 13 | 113 | 147 | 21 |
| | 14 | 111 | 142 | 19 |

| | | | | |
|---|---|---|---|---|
| | 12 | 47 | 66 | 17 |
| | 13 | 10 | 18 | 6 |
| | 14 | 11 | 22 | 6 |
| | 15 | 22 | 49 | 18 |
| | 16 | 35 | 65 | 22 |
| Gujrat | 1 | 18 | 26 | 3 |
| | 2 | 38 | 54 | 7 |
| | 3 | 44 | 54 | 5 |
| | 4 | 38 | 44 | 5 |
| | 5 | 41 | 52 | 6 |
| | 6 | 28 | 38 | 5 |
| | 7 | 8 | 10 | 2 |
| | 8 | 12 | 14 | 2 |
| Hyderabad | 1 | 130 | 166 | 7 |
| | 2 | 50 | 67 | 6 |
| | 3 | 70 | 85 | 7 |
| | 4 | 107 | 145 | 13 |
| | 5 | 78 | 104 | 16 |
| | 6 | 31 | 43 | 7 |
| | 7 | 67 | 87 | 10 |
| | 8 | 72 | 90 | 13 |
| | 9 | 90 | 111 | 13 |
| | 10 | 60 | 80 | 11 |
| | 11 | 64 | 88 | 12 |
| | 12 | 77 | 99 | 14 |
| | 13 | 66 | 88 | 15 |
| | 14 | 81 | 104 | 14 |
| | 15 | 61 | 82 | 18 |
| | 16 | 77 | 101 | 14 |
| | 17 | 46 | 61 | 9 |
| | 18 | 30 | 41 | 7 |
| Karachi | 1 | 174 | 232 | 35 |
| | 2 | 437 | 604 | 114 |
| | 3 | 84 | 119 | 24 |
| | 15 | 120 | 173 | 30 |
| | 16 | 66 | 104 | 19 |
| Rawalpindi | 1 | 38 | 57 | 18 |
| | 2 | 22 | 38 | 16 |
| | 4 | 25 | 42 | 17 |
| | 5 | 1 | 2 | 1 |
| | 6 | 129 | 180 | 44 |
| | 7 | 20 | 32 | 11 |
| | 8 | 1 | 2 | 1 |
| | 9 | 4 | 5 | 3 |
| | 10 | 3 | 5 | 2 |
| | 11 | 44 | 68 | 21 |
| | 12 | 2 | 3 | 1 |
| | 13 | 57 | 84 | 23 |
| | 14 | 7 | 12 | 4 |
| Sheikhupura | 1 | 43 | 57 | 9 |
| | 2 | 106 | 134 | 11 |
| | 3 | 123 | 160 | 18 |
| | 4 | 26 | 31 | 4 |
| | 6 | 34 | 50 | 11 |
| Sialkot | 1 | 26 | 34 | 8 |
| | 2 | 28 | 36 | 8 |
| | 3 | 41 | 54 | 13 |
| | 4 | 32 | 41 | 9 |
| | 5 | 42 | 55 | 13 |
| | 6 | 55 | 73 | 17 |
| | 7 | 98 | 127 | 29 |
| | 8 | 33 | 45 | 12 |
| | 9 | 46 | 67 | 18 |
| | 10 | 43 | 64 | 18 |
| Sukkhur | 1 | 38 | 52 | 16 |
| | 2 | 22 | 28 | 8 |
| | 3 | 17 | 22 | 5 |
| | 4 | 24 | 30 | 9 |

| | | | | |
|---|---|---|---|---|
| | 4 | 131 | 182 | 35 |
| | 5 | 58 | 88 | 15 |
| | 6 | 364 | 464 | 51 |
| | 7 | 204 | 275 | 49 |
| | 8 | 425 | 567 | 83 |
| | 9 | 720 | 935 | 133 |
| | 10 | 101 | 126 | 18 |
| | 11 | 258 | 333 | 46 |
| | 12 | 66 | 96 | 24 |
| | 13 | 15 | 20 | 3 |
| | 14 | 252 | 355 | 70 |
| | 15 | 76 | 107 | 24 |
| | 16 | 150 | 212 | 23 |
| | 17 | 16 | 24 | 5 |
| | 18 | 14 | 21 | 6 |
| | 19 | 156 | 220 | 44 |
| | 20 | 100 | 141 | 21 |
| | 21 | 377 | 487 | 82 |
| | 22 | 356 | 449 | 78 |
| | 23 | 300 | 405 | 69 |
| | 24 | 594 | 733 | 86 |
| | 25 | 302 | 407 | 61 |
| | 26 | 258 | 320 | 32 |
| | 27 | 129 | 178 | 40 |
| | 28 | 162 | 225 | 55 |
| | 29 | 346 | 446 | 78 |
| | 30 | 588 | 754 | 102 |
| | 31 | 268 | 374 | 80 |
| | 32 | 87 | 130 | 26 |
| | 33 | 162 | 236 | 56 |
| | 34 | 125 | 180 | 40 |
| | 35 | 102 | 148 | 34 |
| | 36 | 76 | 111 | 27 |
| | 37 | 122 | 179 | 45 |
| | 38 | 219 | 277 | 47 |

| | | | | |
|---|---|---|---|---|
| | 5 | 40 | 52 | 13 |
| | 6 | 25 | 31 | 7 |
| | 7 | 28 | 39 | 10 |
| | 8 | 49 | 68 | 22 |
| | 9 | 38 | 49 | 10 |
| | 10 | 29 | 41 | 14 |
| | 11 | 32 | 42 | 8 |
| | 12 | 17 | 24 | 9 |
| Turbat | 1 | 25 | 30 | 3 |
| | 2 | 62 | 78 | 6 |
| | 3 | 33 | 39 | 5 |
| | 4 | 43 | 52 | 6 |
| Kasoor | 1 | 57 | 68 | 11 |
| | 2 | 33 | 41 | 6 |
| | 3 | 14 | 20 | 6 |
| | 4 | 23 | 28 | 3 |
| | 5 | 40 | 54 | 14 |
| | 6 | 40 | 46 | 5 |
| Larkana | 1 | 152 | 208 | 18 |
| | 2 | 195 | 216 | 21 |
| | 3 | 275 | 320 | 35 |
| | 4 | 89 | 100 | 8 |
| | 5 | 87 | 104 | 10 |
| | 6 | 139 | 157 | 18 |
| | 7 | 122 | 160 | 12 |
| | 8 | 301 | 355 | 28 |
| | 9 | 194 | 217 | 17 |
| | 10 | 600 | 708 | 39 |
| Mirpur Khas | 1 | 59 | 76 | 12 |
| | 2 | 22 | 29 | 7 |
| | 3 | 18 | 26 | 6 |
| | 4 | 32 | 45 | 3 |
| | 5 | 33 | 43 | 9 |
| | 6 | 26 | 33 | 5 |
| | 7 | 52 | 63 | 10 |

| | | | | |
|---|---|---|---|---|
| | 39 | 242 | 303 | 41 |
| | 40 | 242 | 340 | 73 |
| | 41 | 298 | 415 | 74 |
| | 42 | 414 | 538 | 91 |
| | 43 | 352 | 448 | 75 |
| | 44 | 288 | 373 | 54 |
| | 45 | 205 | 278 | 43 |
| | 46 | 127 | 168 | 26 |
| | 47 | 271 | 348 | 57 |
| | 48 | 202 | 261 | 48 |
| | 49 | 241 | 307 | 58 |
| | 50 | 149 | 194 | 37 |
| | 51 | 31 | 44 | 9 |
| | 52 | 713 | 924 | 144 |

| | | | | |
|---|---|---|---|---|
| | 8 | 1 | 2 | 1 |
| | 10 | 20 | 26 | 2 |
| Nawabshah | 1 | 41 | 57 | 9 |
| | 2 | 104 | 190 | 17 |
| | 3 | 63 | 91 | 12 |
| | 4 | 45 | 69 | 9 |
| | 5 | 49 | 70 | 14 |
| | 6 | 267 | 350 | 31 |
| | 7 | 34 | 48 | 12 |
| | 8 | 102 | 150 | 24 |
| Bannu | 1 | 121 | 160 | 39 |
| | 2 | 46 | 64 | 17 |
| | 3 | 26 | 37 | 10 |
| | 4 | 14 | 20 | 6 |
| | 5 | 27 | 36 | 9 |
| | 6 | 13 | 14 | 4 |

## 5.3 Estimated Number & distribution of FSWS by Spot typology

A number of operational typologies were defined based on the way sex workers operate and interact with their clients and peers. The main typologies reported in the course of this mapping exercise were KK based (20,964 to 24,170), followed by residence or home based (17,272 to 20,726), cell phone based (9,303 to 12,181) and street based FSWs (7,901 to 10,347). In addition, hotel/massage based sex workers (1,567 to 2,052) distributed over 300 massage parlors/hotels; FSWs operating at various brothels (727 to 952) were also seen.

Table 5.3 shows the estimated number of FSWs (Average number and a range for each average estimate) by spot typology. Figure 5.2 provides proportional distribution of spots by spot typology. Box 5.1 provides a description/definition of the various typologies of FSWs

The distribution of sex work has strong implications on prevention programs providing evidence on where prevention programs should focus. Figure 5.2 shows the distribution of FSWs by spot typology in Pakistan. The density of FSWs is illustrated according to the proportions of pie chart with 36% of FSWs who are KK based, 29% home based following by 17% are cell phone based while brothel and hotel/massage centers are only 1% and 3% respectively.

Table 5.3: Estimated number of FSWs by spot typology in Pakistan, 2016

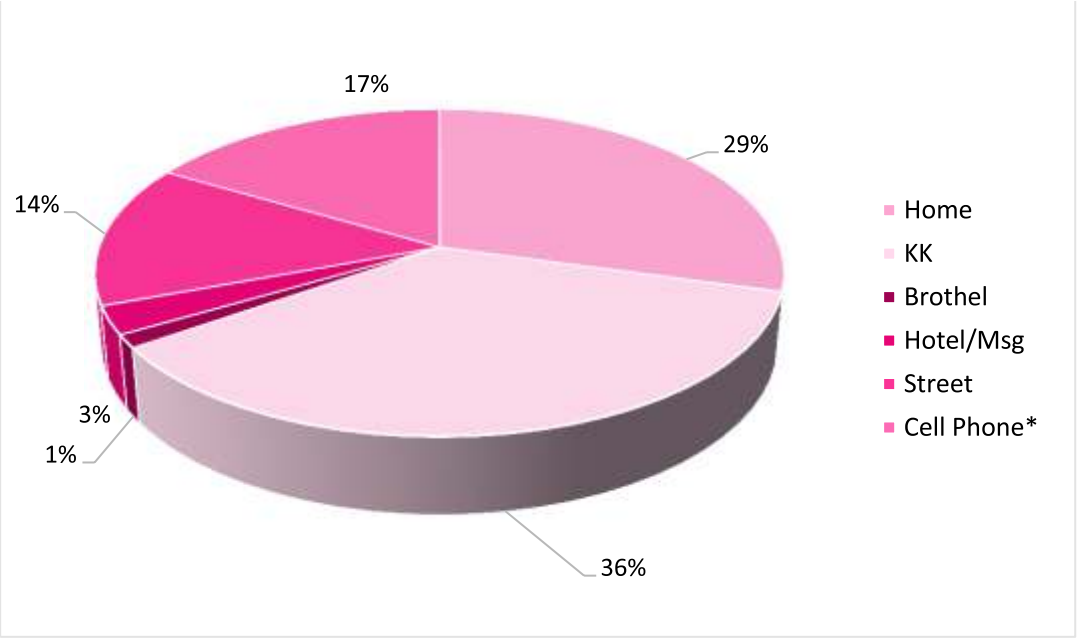
| | Average No | Minimum | Maximum |
|---|---|---|---|
| **TOTAL ESTIMATE** | **64,829** | **57,734** | **70,428** |
| Home | 18,999 | 17,272 | 20,726 |
| KK | 23,315 | 20,964 | 24,170 |
| Brothel | 840 | 727 | 952 |
| Hotel/Massage etc | 1,809 | 1,567 | 2,052 |
| Street | 9,124 | 7,901 | 10,347 |
| Cell Phone* | 10,742 | 9,303 | 12,181 |

** Cell phone based FSWs come to a public place after negotiating with the client through a cell phone.*

** Street based estimates are adjusted based on the number of spots each sex worker works*

** KK based estimates are also adjusted based on the number of KKs each sex worker works*

Fig 5.2: Proportional distribution of FSWs by spot typology in Pakistan, 2016



BOX 5.1. Operational typologies of FSWs in Pakistan

**Street-based FSWs**: solicit clients at the street or in public places such as major transactions, parks, bus stops, market places etc.,

**Home based FSWs**: usually operate from their homes, contacting their clients on the phone or through other FSWs and/or through network operators and pimps. The family might or might not be involved in the sex work business.

**Hotel Based FSWs:** operate in various hotels and are solicited either by the client directly, or the solicitation is mediated by some hotel staff

**Kothikhana(KK) Based FSWs**: "Kothikhana" is a colloquial expression for a sex work venue that literally means "grand house" which are rented by a madam and/or network operators in a residential area, where a small number of FSWs live and entertain clients

**Cell phone based FSWs**: who use cell phones as the major way of acquiring clients were also identified by this mapping. These girls are termed 'cell phone based FSWs'

**Massage Parlor based FSWs**: operate in establishments e.g., massage parlors where they pick clients. Not all but most of the women working in these venues provide sexual services to clients.

## 5.4 Typology of FSW spots by cities in Pakistan

Further analyses showed that the distribution of typology remained different in various cities. For example in Bannu we only found a very small proportion of hotel based (4%) and street based (4%) FSWs, while more than 90% were home based. In comparison to Nawabshah, all different typologies of FSWs were reported. Although the largest proportion was cell phone based FSWs (37%), other typologies were also in significant proportions i.e., home based FSWs approximately 26%, KK based (20%), massage/hotel based FSWs 5% and street based FSWs approximately 7%. A few brothel based were also reported (4%). Further results from other cities can be read from the Figure 5.3.

Figure 5.3: Distribution of FSWs by spot typology in cities of Pakistan

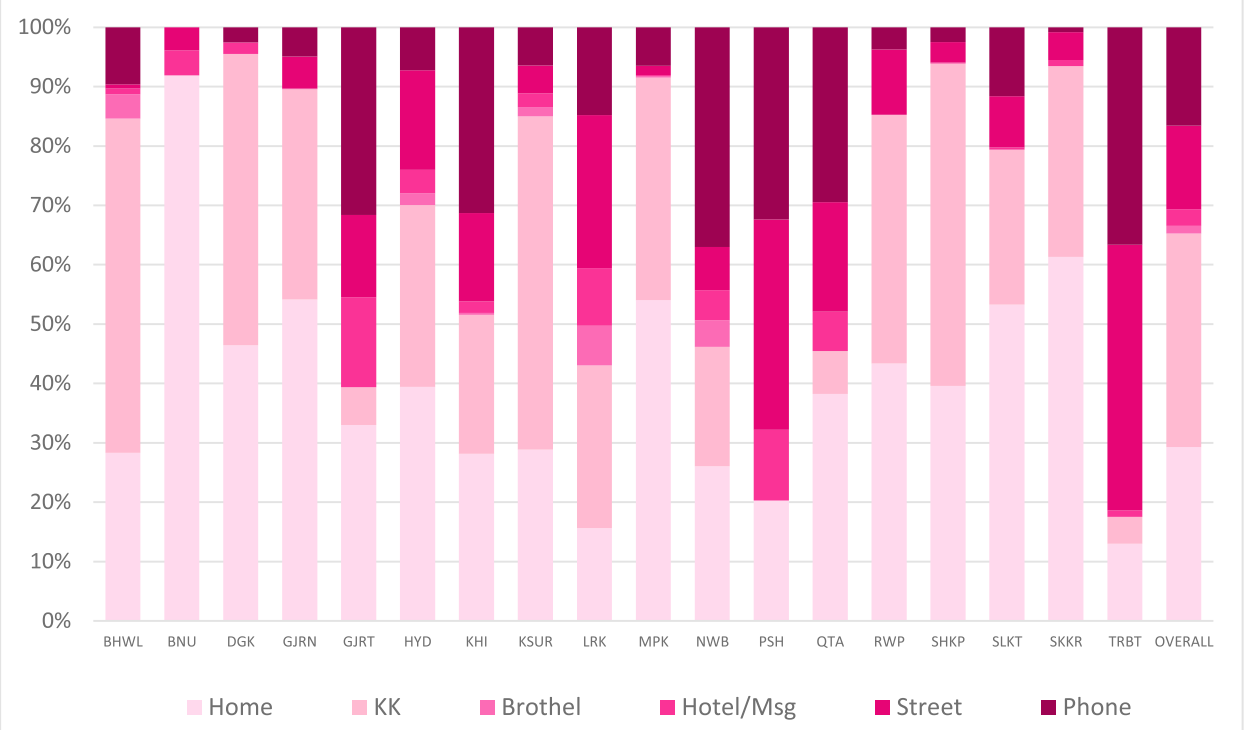



Table 5.4: Estimated number of FSWs by spot typology in all cities mapped, 2016

| | Home | KK | Brothel | Hotel/Msg | Street | Cell Phone* | Total |
|---|---|---|---|---|---|---|---|
| Bahawalpur | 1,757 | 3,489 | 254 | 60 | 45 | 596 | 6,201 |
| Bannu | 176 | - | | 8 | 8 | - | 192 |
| DG Khan | 627 | 662 | | 26 | - | 35 | 1,349 |
| Gujranwala | 2,204 | 1,440 | | 5 | 221 | 199 | 4,069 |
| Gujrat | 105 | 20 | | 48 | 44 | 100 | 317 |
| Hyderabad | 1,744 | 1,356 | 90 | 174 | 743 | 320 | 4,426 |
| Karachi | 7,091 | 5,901 | 79 | 492 | 3,749 | 7,879 | 25,191 |
| Kasoor | 501 | 977 | 27 | 40 | 82 | 112 | 1,739 |
| Larkana | 718 | 1,258 | 308 | 447 | 1,182 | 680 | 4,593 |
| Mirpur Khas | 1,126 | 781 | 7 | 3 | 33 | 136 | 2,084 |
| Nawabshah | 440 | 340 | 75 | 86 | 123 | 625 | 1,690 |
| Peshawar | 155 | - | | 91 | 271 | 248 | 765 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Quetta | 1,575 | 298 | | 273 | 759 | 1,215 | 4,121 |
| Rawalpindi | 1,069 | 1,033 | | | 271 | 92 | 2,465 |
| Sheikhupura | 2,476 | 3,394 | | 12 | 214 | 156 | 6,252 |
| Sialkot | 1,081 | 531 | | 7 | 175 | 236 | 2,031 |
| Sukkhur | 2,028 | 1,063 | | 33 | 156 | 27 | 3,307 |
| Turbat | 68 | 24 | | 6 | 234 | 191 | 523 |
| **Grand Total** | **18,999** | **23,315** | **840** | **1,809** | **9,124** | **10,742** | **64,829** |

## 5.5 Estimated Number of FSWs by spot typology in cities

While the previous section provides distribution of spot typology in various cities, the table presented in this section provides estimated number of FSWs at each different type of spot.

Table 5.5: Estimated number of FSWs by spot typology in Pakistan, 2016

| City | Spot type | No of spots | No of FSWs | Spot size |
|---|---|---|---|---|
| Bahawalpur | Brothel | 52 | 254 | 4.9 |
| | Hotel/Massage Parlors | 17 | 60 | 3.5 |
| | Markets/Shopping Plaza | 12 | 57 | 4.7 |
| | Street/Open space | 93 | 356 | 3.8 |
| Bannu | Hotel/Massage Parlors | 1 | 8 | 7.5 |
| Dera Ghazi Khan | Hotel/Massage Parlors | 6 | 26 | 4.4 |
| | Markets/Shopping Plaza | 1 | 4 | 3.5 |
| | Street/Open space | 4 | 8 | 2 |
| Gujranwala | Brothel | 1 | 4 | 3.5 |
| | Hotel/Massage Parlors | 1 | 5 | 4.5 |
| | Markets/Shopping Plaza | 2 | 11 | 5.3 |
| | Street/Open space | 142 | 471 | 3.3 |
| Gujrat | Hotel/Massage Parlors | 6 | 48 | 8 |
| | Street/Open space | 19 | 132 | 7 |
| Hyderabad | Brothel | 2 | 90 | 45 |
| | Hotel/Massage Parlors | 26 | 174 | 6.7 |
| | Markets/Shopping Plaza | 17 | 120 | 7.1 |
| | Street/Open space | 137 | 902 | 6.6 |

| | | | | |
|---|---|---|---|---|
| Karachi | Brothel | 10 | 79 | 7.9 |
| | Hotel/Massage Parlors | 95 | 492 | 5.2 |
| | Markets/Shopping Plaza | 61 | 313 | 5.1 |
| | Street/Open space | 2463 | 12,942 | 5.3 |
| Kasoor | Brothel | 2 | 27 | 13.3 |
| | Hotel/Massage Parlors | 12 | 40 | 3.3 |
| | Markets/Shopping Plaza | 3 | 15 | 5.1 |
| | Street/Open space | 24 | 112 | 4.7 |
| Larkana | Brothel | 11 | 308 | 28 |
| | Hotel/Massage Parlors | 42 | 447 | 10.6 |
| | Markets/Shopping Plaza | 2 | 24 | 12 |
| | Street/Open space | 144 | 1,451 | 10.1 |
| Mirpur Khas | Brothel | 1 | 7 | 6.5 |
| | Hotel/Massage Parlors | 1 | 3 | 2.5 |
| | Markets/Shopping Plaza | 2 | 8 | 3.8 |
| | Street/Open space | 39 | 175 | 4.5 |
| Nawabshah | Brothel | 7 | 75 | 10.8 |
| | Hotel/Massage Parlors | 10 | 86 | 8.6 |
| | Markets/Shopping Plaza | 2 | 10 | 5.2 |
| | Street/Open space | 105 | 684 | 6.5 |
| Peshawar | Hotel/Massage Parlors | 24 | 91 | 3.8 |
| | Markets/Shopping Plaza | 5 | 18 | 3.5 |
| | Street/Open space | 117 | 502 | 4.3 |
| Quetta | Hotel/Massage Parlors | 41 | 273 | 6.7 |
| | Markets/Shopping Plaza | 27 | 154 | 5.7 |
| | Street/Open space | 258 | 1,636 | 6.3 |
| Rawalpindi | Street/Open space | 162 | 442 | 2.7 |
| Sheikhupura | Brothel | 3 | 15 | 5 |
| | Hotel/Massage Parlors | 3 | 12 | 3.9 |
| | Markets/Shopping Plaza | 1 | 3 | 2.5 |
| | Street/Open space | 61 | 422 | 6.9 |
| Sialkot | Hotel/Massage Parlors | 2 | 7 | 3.5 |
| | Markets/Shopping Plaza | 1 | 5 | 4.5 |
| | Street/Open space | 132 | 466 | 3.5 |
| Sukkhur | Brothel | 1 | 2 | 2 |

| | | | | |
|---|---|---|---|---|
| | Hotel/Massage Parlors | 12 | 33 | 2.8 |
| | Markets/Shopping Plaza | 4 | 16 | 4 |
| | Street/Open space | 59 | 159 | 2.7 |
| Turbat | Hotel/Massage Parlors | 1 | 6 | 5.5 |
| | Markets/Shopping Plaza | 2 | 20 | 10 |
| | Street/Open space | 17 | 156 | 9.1 |

## 5.6 Mapping Network Operators (Home & KK based FSWS)

A network operator (NWO); a leader FSW or a pimp, is the key to the operations of a large proportion of FSWs, especially the home and KK (kothikhana) based typologies. Network operators mediate sex work and act as gate keepers for FSWs. The network operator is usually a woman who is either a working FSW herself (or a retired FSW), who works with a variable number of sex workers and connects them with the clients. The clients would not know the FSWs directly but would be in connection with the NWOs, who would have a wide choice of sex workers and would cater to the request of the client. While the girls keep on changing, the client-NWOs relationship would usually stay for a longer period of time, and in such kind of sex work interactions, NWOs play a leading role.

Network mapping thus maps various network operators in a city, using the same principles of geo-mapping, to estimate the number of NWOs in a city. Furthermore, each NWO will be inquired about the number of girls they work with, to estimate the total number of home base and kothikhana based FSWs. As already mentioned, home based FSWs, usually operate from their homes, contacting their clients on the phone or through other FSWs and/or through network operators and pimps. The family might or might not be involved in the sex work business. “Kothikhana” is a colloquial expression for a sex work venue that literally means “grand house” which are rented by a madam and/or network operators in a residential area, where a small number of FSWs live and entertain clients.

Table 5.6 describes the average mapped network operators and the number of girls working with each of them with respect to their typologies (home based/kk based). On an average 6 girls are reported to work with a network operator with an average number of 2.7 home based and 3.3 KK based FSWs working with each NWO.

Table 5.6: Estimated number of NWOs and FSWs working with them in each city, 2016

| City | Interviews conducted | Network Operators | | | FSWs working with a NW operator | | |
|---|---|---|---|---|---|---|---|
| | | Min | Max | Avg | Overall | Home based | KK based |
| Bahawalpur | 102 | 625 | 750 | 687 | 7.6 | 2.6 | 5.1 |
| DGhazi Khan | 60 | 326 | 391 | 359 | 3.6 | 1.7 | 1.8 |
| Gujranwala | 132 | 717 | 860 | 789 | 4.6 | 2.8 | 1.8 |
| Gujrat | 10 | 22 | 26 | 24 | 5.2 | 4.4 | 1 |
| Hyderabad | 42 | 265 | 318 | 292 | 10.6 | 6.0 | 4.6 |
| Karachi | 150 | 2,344 | 2,471 | 2,407 | 5.4 | 2.9 | 2.5 |
| Kasoor | 50 | 181 | 218 | 199 | 7.4 | 2.5 | 4.9 |
| Larkana | 45 | 209 | 251 | 230 | 8.6 | 3.1 | 5.5 |
| Mirpur Khas | 26 | 211 | 254 | 232 | 8.2 | 4.8 | 3.4 |
| Nawabshah | 14 | 156 | 174 | 165 | 4.7 | 2.7 | 2.1 |
| Quetta | 32 | 215 | 227 | 221 | 8.5 | 7.1 | 1.3 |
| Rawalpindi | 86 | 616 | 688 | 652 | 3.2 | 1.6 | 1.6 |
| Sheikhupura | 213 | 603 | 723 | 663 | 8.9 | 3.7 | 5.1 |
| Sialkot | 71 | 355 | 426 | 391 | 4.1 | 2.8 | 1.4 |
| Sukkhur | 70 | 446 | 535 | 491 | 6.3 | 4.1 | 2.2 |
| Turbat | 11 | 70 | 84 | 77 | 1.2 | 1 | - |
| Grand Total | 1114 | 6,308 | 7,570 | 6,939 | 6.0 | 2.7 | 3.3 |

Based on the numbers of network operators we calculated a number of home based and kothi khana based FSWs in each of the cities mapped. More than 1100 interviews were conducted with NWOs around the country to inquire about the number of girls each NWO works with. Respondents were also inquired about the number of Kothi khana's they manage and spot validation for kothi khana's was done during field implementation. More than 1000 kothikhana's were visited and information was gathered to understand the dynamics of this SW typology and use this information to develop estimates for KK based FSWs. Home based FSWs were not visited at their homes because of ethical reasons, however a substantial number of home based FSWs were interviewed outside of their homes. Table 5.7 provides information on the estimated number of Home based and KK based FSWs in the various cities mapped.

Table 5.7: Estimated number of Home based and KK based FSWs in each city, 2016

| City | Home based FSWs | | | KK based FSWs | | |
|---|---|---|---|---|---|---|
| | Min | Max | Avg | Min | Max | Avg |
| Bahawalpur | 1,540 | 1,974 | 1,757 | 3,172 | 3,806 | 3,489 |
| DG Khan | 563 | 691 | 627 | 602 | 722 | 662 |
| Gujranwala | 1,998 | 2,410 | 2,204 | 1,309 | 1,571 | 1,440 |
| Gujrat | 90 | 119 | 105 | 18 | 22 | 20 |
| Hyderabad | 1,571 | 1,917 | 1,744 | 1,233 | 1,479 | 1,356 |
| Karachi | 6,874 | 7,308 | 7,091 | 5,746 | 6,056 | 5,901 |
| Kasoor | 456 | 547 | 501 | 888 | 1,066 | 977 |
| Larkana | 656 | 780 | 718 | 1,143 | 1,372 | 1,258 |
| Mirpur Khas | 1,019 | 1,233 | 1,126 | 710 | 852 | 781 |
| Nawabshah | 415 | 465 | 440 | 321 | 359 | 340 |
| Peshawar | 119 | 191 | 155 | | | |
| Quetta | 1,359 | 1,792 | 1,575 | 290 | 306 | 298 |
| Rawalpindi | 1,009 | 1,128 | 1,069 | 976 | 1,091 | 1,033 |
| Sheikhupura | 2,249 | 2,702 | 2,476 | 3,086 | 3,703 | 3,394 |
| Sialkot | 981 | 1,182 | 1,081 | 482 | 579 | 531 |
| Sukkhur | 1,837 | 2,218 | 2,028 | 966 | 1,160 | 1,063 |
| Turbat | 62 | 74 | 68 | 22 | 26 | 24 |

## 5.7 Peak days and Usual Day Estimates

Table 5.8 shows the estimated number of FSW on a usual and a peak day in various cities in Pakistan. Peak days are defined as days **"when the number of sex workers are slightly higher than the usual numbers e.g., on weekends etc.,** The reason for this increased number is due to the fact that various "part time sex workers" also come to work and function through the existing spots on days when there is presumably more clientele. While this number differs for various cities, the overall number of FSWs change by 30% (on an average). From a program perspective, developing estimates reported on a peak day are important, since the services for sex worker community should be planned for this higher number in terms of providing better coverage rates

for a comprehensive control of HIV and STI's. The report therefore reports peak day estimates mostly, because this is the number that programs should use for their overall planning and coverage.

Table 5.8 Usual and Peak day estimates for Street/establishment based FSWs in all cities

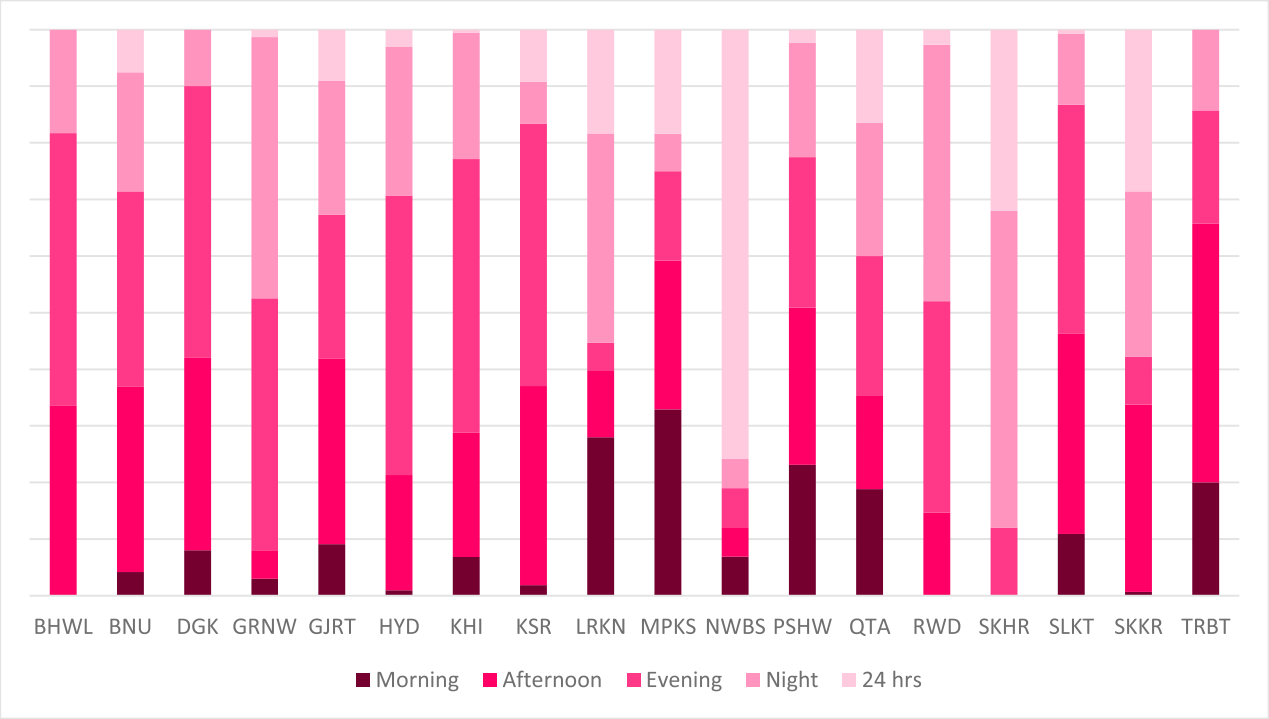
| Cities mapped | Usual Day estimates | | | Peak day estimates | | | % increase |
|---|---|---|---|---|---|---|---|
| | Avg | Min | Max | Avg | Min | Max | |
| Bahawalpur | 603 | 481 | 725 | 641 | 487 | 764 | 6% |
| Bannu | 7 | 6 | 7 | 8 | 7 | 8 | 14% |
| Dera Ghazi Khan | 30 | 26 | 34 | 35 | 30 | 39 | 17% |
| Gujranwala | 381 | 309 | 453 | 420 | 337 | 497 | 10% |
| Gujrat | 114 | 93 | 136 | 144 | 119 | 163 | 26% |
| Hyderabad | 724 | 592 | 855 | 1,063 | 862 | 1,204 | 47% |
| Karachi | 8,811 | 7,377 | 10,245 | 11,628 | 9,628 | 13,253 | 32% |
| Kasoor | 117 | 95 | 138 | 194 | 113 | 216 | 66% |
| Larkana | 1,288 | 1,155 | 1,421 | 1,863 | 1,639 | 2,022 | 45% |
| Mirpur Khas | 144 | 125 | 163 | 168 | 144 | 190 | 17% |
| Nawabshah | 575 | 461 | 690 | 748 | 580 | 887 | 30% |
| Peshawar | 453 | 352 | 554 | 519 | 386 | 627 | 15% |
| Quetta | 1,566 | 1,292 | 1,840 | 1,974 | 1,655 | 2,280 | 26% |
| Rawalpindi | 237 | 172 | 302 | 363 | 233 | 435 | 53% |
| Sheikhupura | 246 | 203 | 289 | 371 | 297 | 422 | 51% |
| Sialkot | 298 | 229 | 367 | 411 | 330 | 473 | 38% |
| Sukkhur | 147 | 128 | 167 | 183 | 147 | 213 | 24% |
| Turbat | 345 | 317 | 374 | 425 | 320 | 468 | 23% |

## 5.8 Peak timings of operation

While weekends (Friday, Saturday and Sunday also) are the peak days of operation for spots (especially street based, kk based, brothels, establishments etc.,), evenings were the timings where most FSWs would visit spots. There were a few variations among cities, for example

Larkana, Sukkhur and Rawalpindi reported night as the peak time for most FSWs to be at the spots. Peak timings for various cities showed regional variations as shown in Figure 5.4.

Fig 5.4 Peak timings of FSW operations in cities mapped



# 6. TRANSGENDER POPULATIONS (TGs)

The Transgender populations were defined as, "individuals whose gender identity and/or expression of their gender differ from social norms related to their gender of birth". Transgender sex workers were defined as, "Individuals who identify themselves as transgendered and receive money or goods in exchange for sexual services, either regularly or occasionally". TGSWs form the smallest typology of key populations in Pakistan. It is important to note that while a very proportion of TGs are involved in sex work, NOT ALL TGs in Pakistan are involved in Sex work. The overall TG population is definitely higher than the numbers presented in this report which only includes TGs involved in sex work For the purpose of this study a female sex worker was defined as "any female who exchanges sex with a man in return for money or benefits, irrespective of site of operation (e.g. street, bars, home, hotel, etc.). There was a wide range of typologies of FSWs determined through this study based on the type of spots that FSWs congregate and associate with clients. As mentioned earlier, female sex workers were mapped using both geo-mapping approach as well as network mapping.

## 6.1 Estimated Number of TGs

Size estimate for Transgender population was obtained through adopting the geographical approach whereby all geographical locations where TGs could congregate were mapped. The average number of TGs estimated in the 23 cities mapped were 31,790 ranging between 26,804 to 36,776 at 9,820 spots.

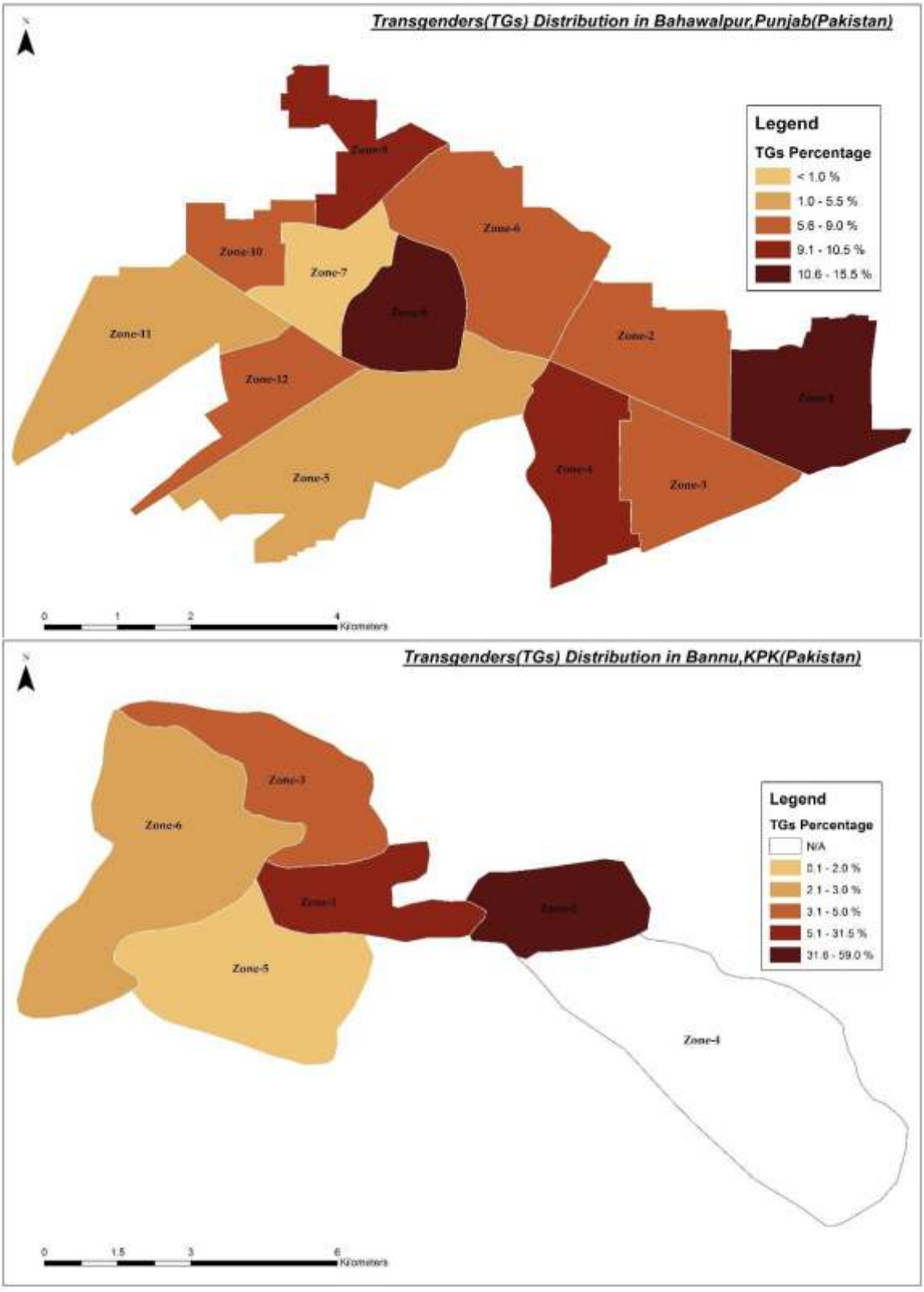
Of the 23 cities in Pakistan, four of the cities had the major concentration of TGs, forming more than 60% of the total estimated number TGs in Pakistan. These cities included Karachi (9,123), Lahore, (3,936), Multan (3,130) and Faisalabad (2,737). Bannu and Turbat reported the lowest number of TGs among all the cities mapped with 38 and 82 TGs respectively. This information is important from a prevention program planning perspective, since the government can focus their efforts greatly on cities where the largest concentration of the TGs are present. The results are shown in Table 6.1.

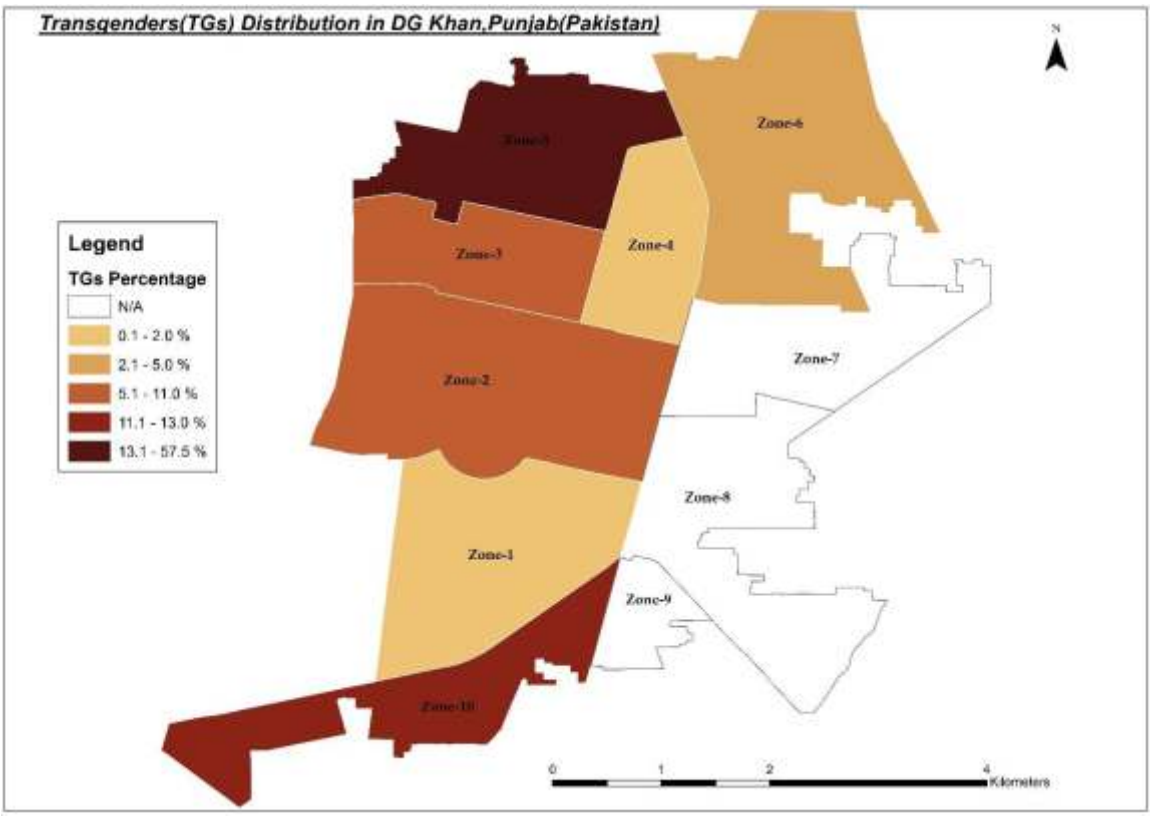
Table 6.1: Estimates of Transgenders in 23 cities mapped in Pakistan, 2016

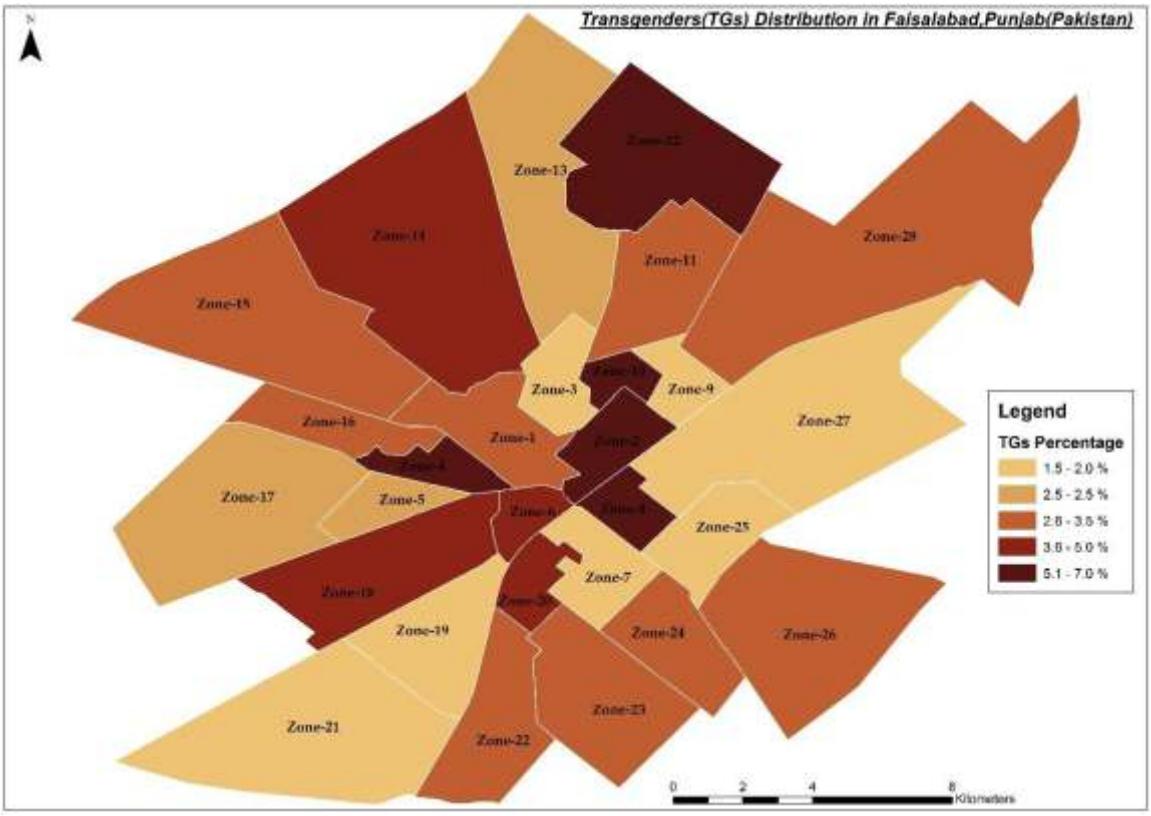
| City | Spot No | Min | Max | Avg. |
|---|---|---|---|---|
| Quetta | 97 | 516 | 629 | 573 |
| Turbat | 14 | 75 | 89 | 82 |
| Bannu | 17 | 33 | 42 | 38 |
| Peshawar | 48 | 179 | 279 | 229 |
| Bahawalpur | 367 | 1,343 | 1,812 | 1,578 |
| Dera Ghazi Khan | 36 | 116 | 196 | 156 |
| Faisalabad | 739 | 1,952 | 3,521 | 2,737 |
| Gujranwala | 215 | 490 | 707 | 598 |
| Gujrat | 43 | 89 | 117 | 103 |
| Jhelum | 108 | 340 | 466 | 403 |
| Kasoor | 125 | 442 | 570 | 506 |
| Lahore | 1,304 | 3,418 | 4,455 | 3,936 |
| Multan | 1,662 | 2,506 | 3,754 | 3,130 |
| Rawalpindi | 601 | 1,250 | 1,910 | 1,580 |
| Sargodha | 212 | 1,077 | 1,348 | 1,213 |
| Sheikhupura | 155 | 709 | 892 | 800 |
| Sialkot | 109 | 464 | 600 | 532 |
| Hyderabad | 368 | 958 | 1,166 | 1,062 |
| Karachi | 2,805 | 7,865 | 10,381 | 9,123 |
| Larkana | 189 | 945 | 1,315 | 1,130 |
| Mirpur Khas | 123 | 250 | 327 | 289 |
| Nawabshah | 101 | 327 | 438 | 383 |
| Sukkhur | 382 | 1,457 | 1,761 | 1,609 |
| | **9,820** | **26,804** | **36,776** | **31,790** |

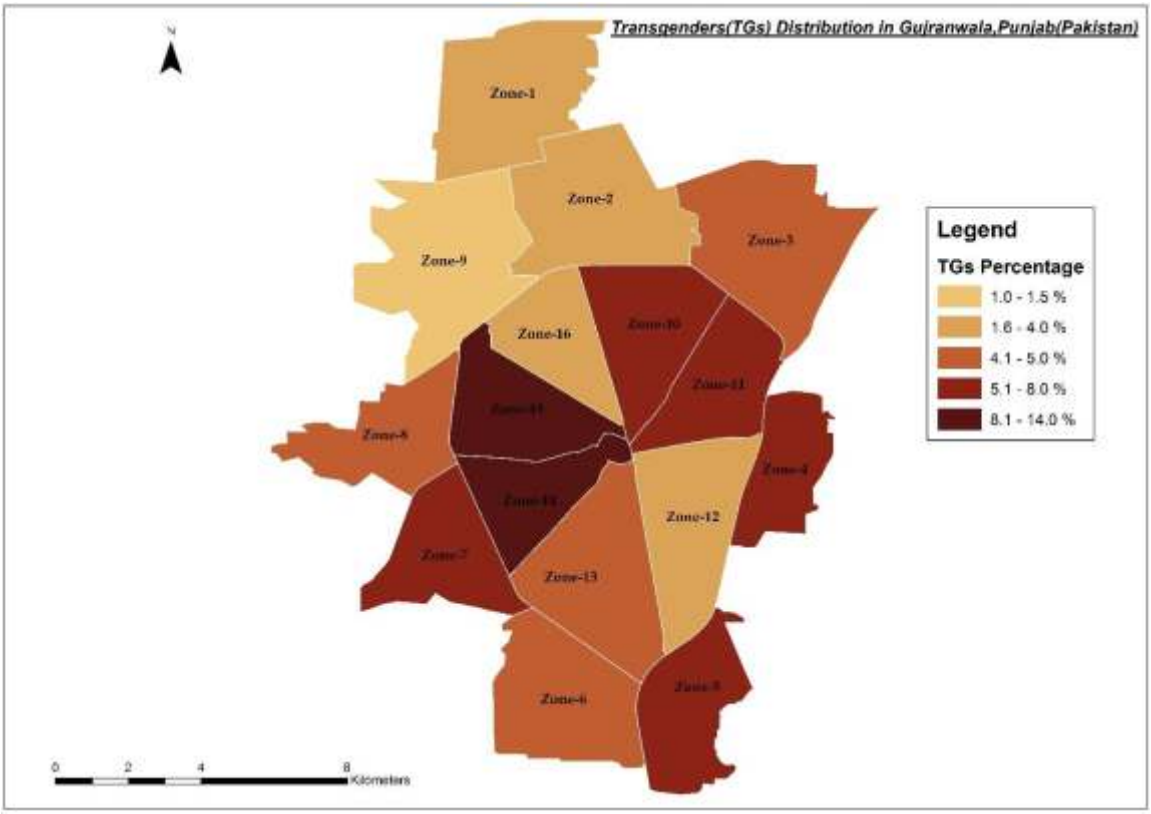
Fig 6.1 presents distribution maps which show the distribution of TGs in various zones of the cities that were mapped for this study. As in other maps presented, the zones shaded dark present a higher number of TGs while the lighter color represents zone with lower estimates.

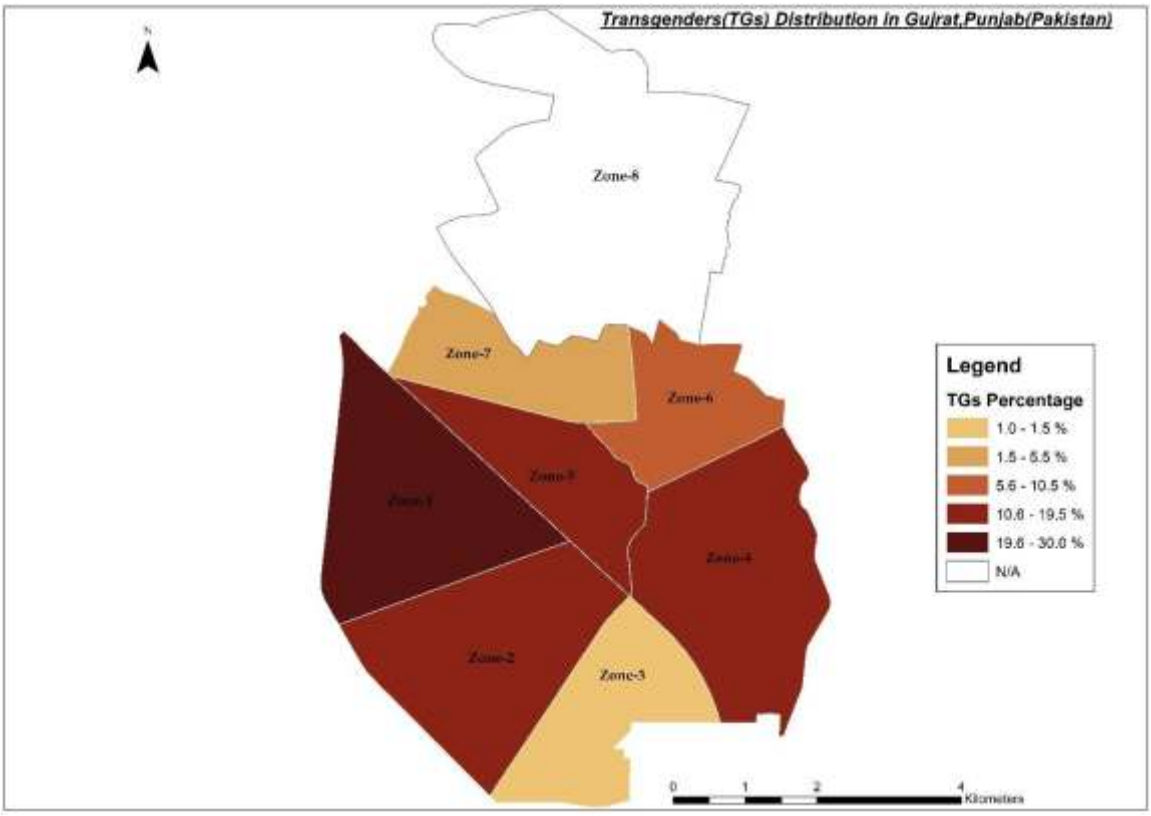
Fig 6.1 Distribution maps of TGs in various cities mapped, 2016

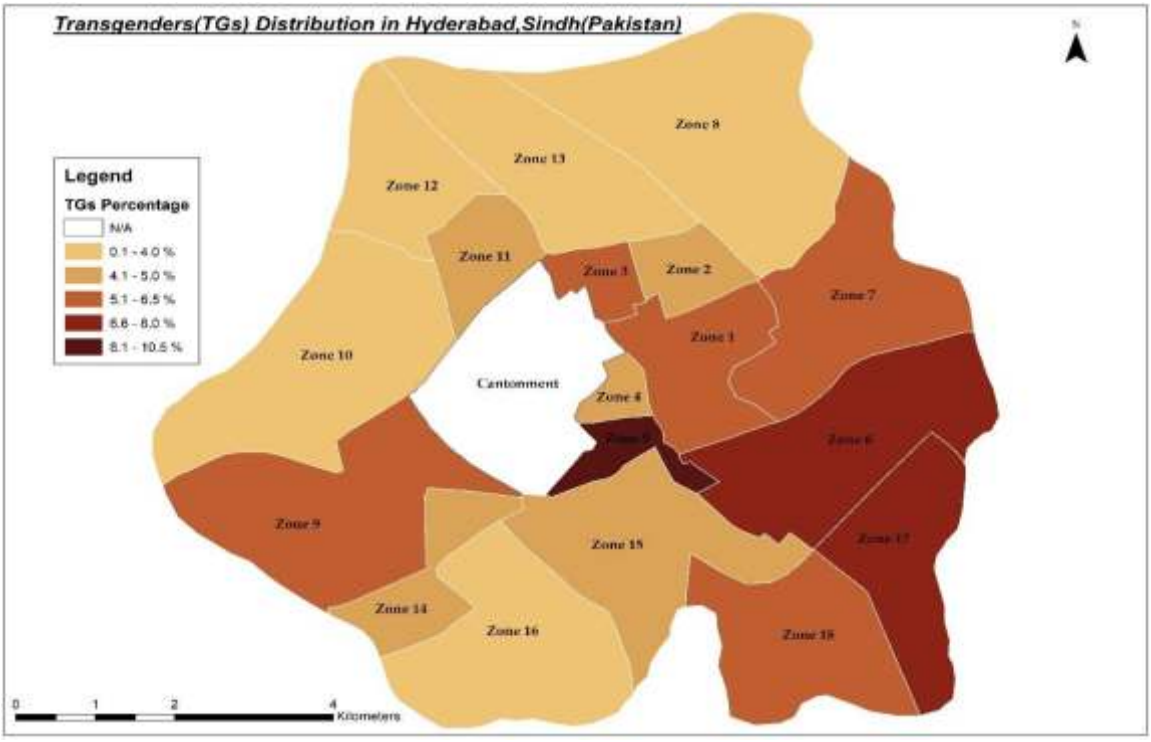


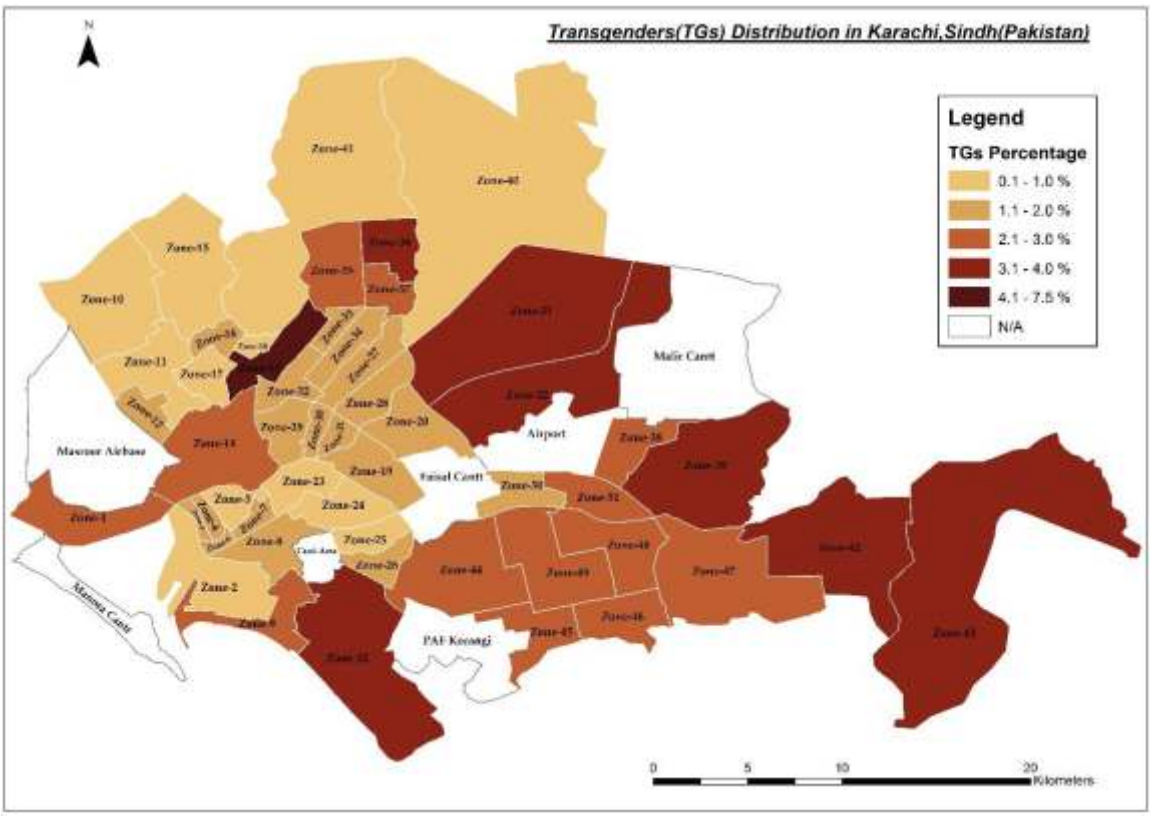

Transgenders(TGs) Distribution in DG Khan,Punjab(Pakistan)
N
Legend
TGs Percentage
N/A
0.1 - 2.0 %
2.1 - 5.0 %
5.1 - 11.0 %
11.1 - 13.0 %
13.1 - 57.5 %
Zone-1
Zone-2
Zone-3
Zone-4
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
0
1
2
4
Kilometers

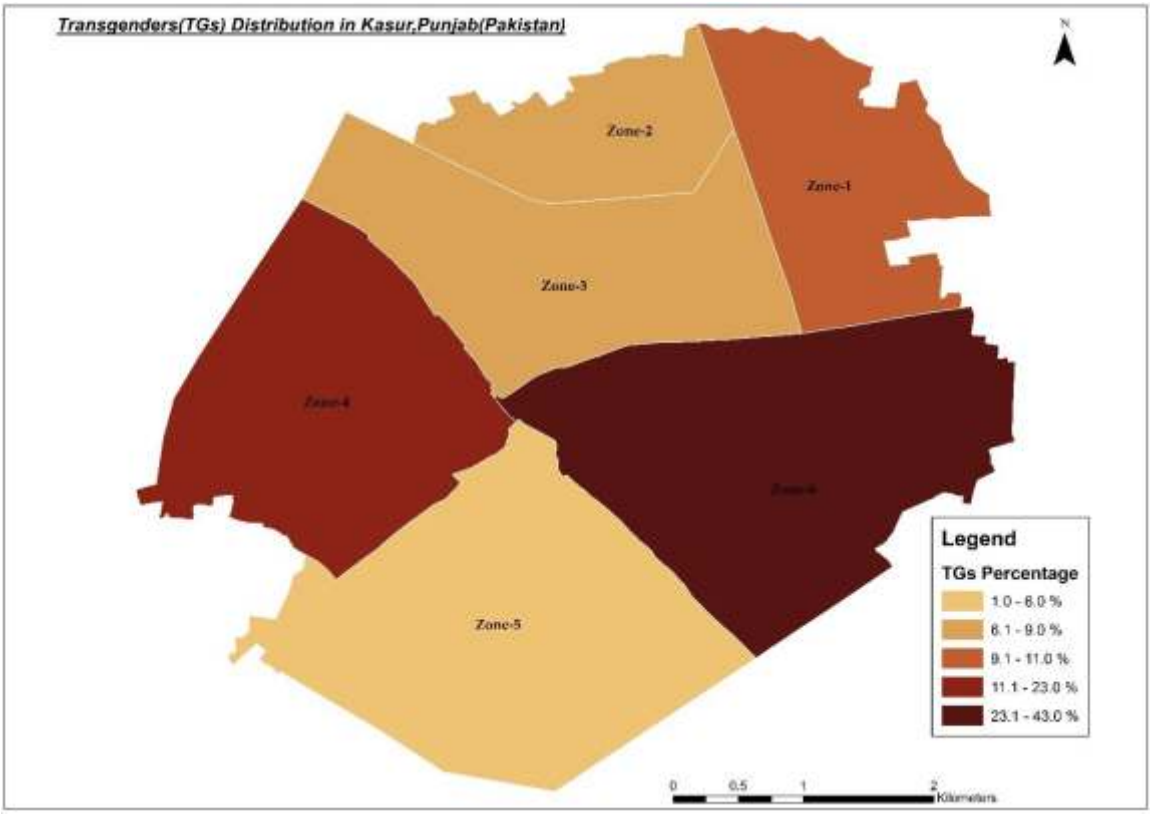

Transgenders(TGs) Distribution in Faisalabad,Punjab(Pakistan)
N
Legend
TGs Percentage
1.5 - 2.0 %
2.5 - 2.5 %
2.6 - 3.5 %
3.6 - 5.0 %
5.1 - 7.0 %
Zone-1
Zone-3
Zone-5
Zone-7
Zone-9
Zone-11
Zone-13
Zone-14
Zone-15
Zone-16
Zone-17
Zone-19
Zone-21
Zone-22
Zone-23
Zone-24
Zone-25
Zone-26
Zone-27
Zone-28
0
2
4
8
Kilometers

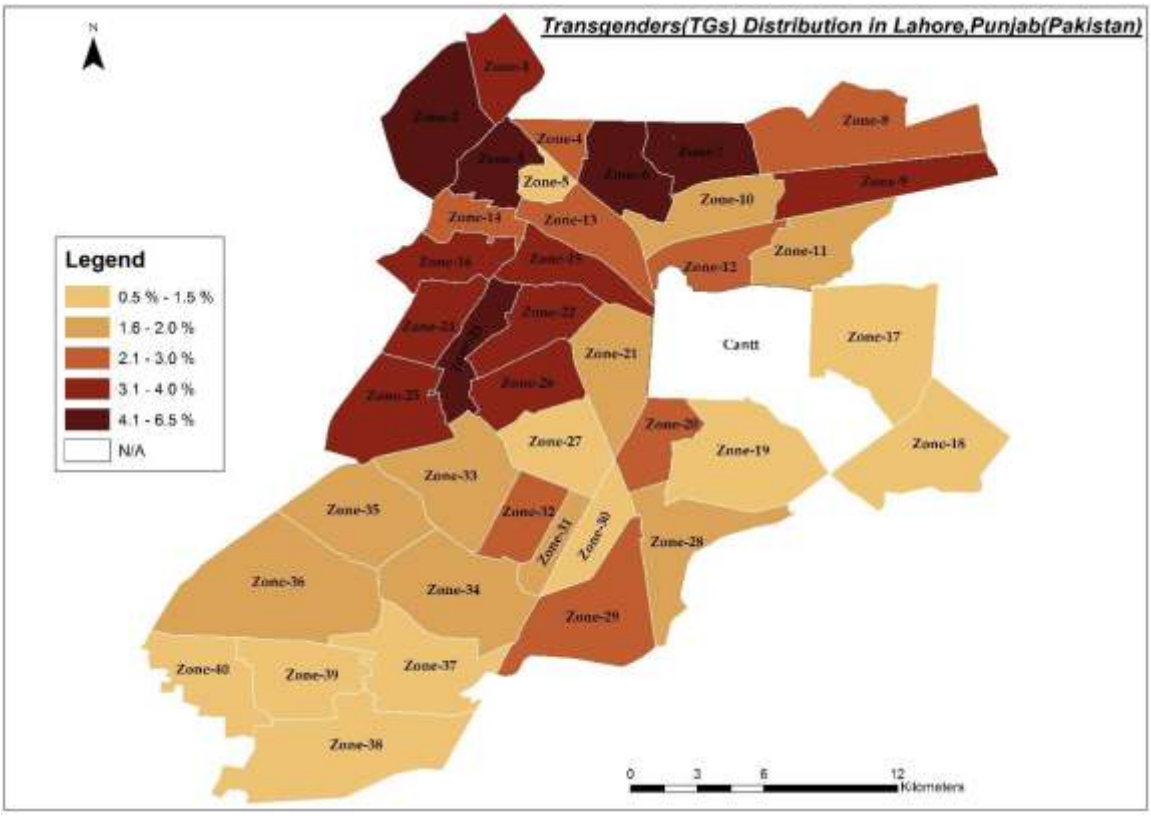

Transgenders(TGs) Distribution in Gujranwala,Punjab(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-9
Zone-16
Zone-10
Zone-11
Zone-8
Zone-14
Zone-12
Zone-7
Zone-13
Zone-6
Legend
TGs Percentage
1.0 - 1.5 %
1.6 - 4.0 %
4.1 - 5.0 %
5.1 - 8.0 %
8.1 - 14.0 %
0 2 4 8
Kilometers

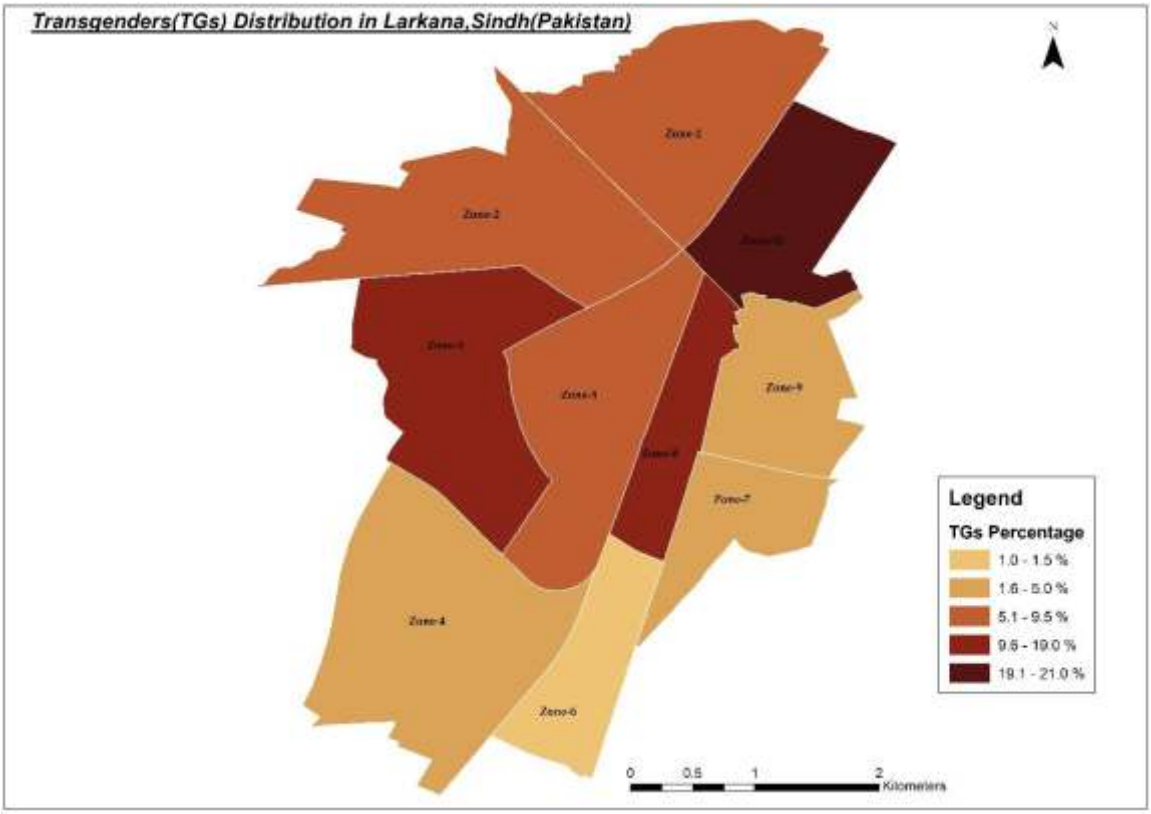

Transgenders(TGs) Distribution in Gujrat,Punjab(Pakistan)
N
Zone-8
Zone-7
Zone-6
Zone-1
Zone-5
Zone-2
Zone-3
Zone-4
Legend
TGs Percentage
1.0 - 1.5 %
1.5 - 5.5 %
5.6 - 10.5 %
10.6 - 19.5 %
19.6 - 30.0 %
N/A
0 1 2 4
Kilometers

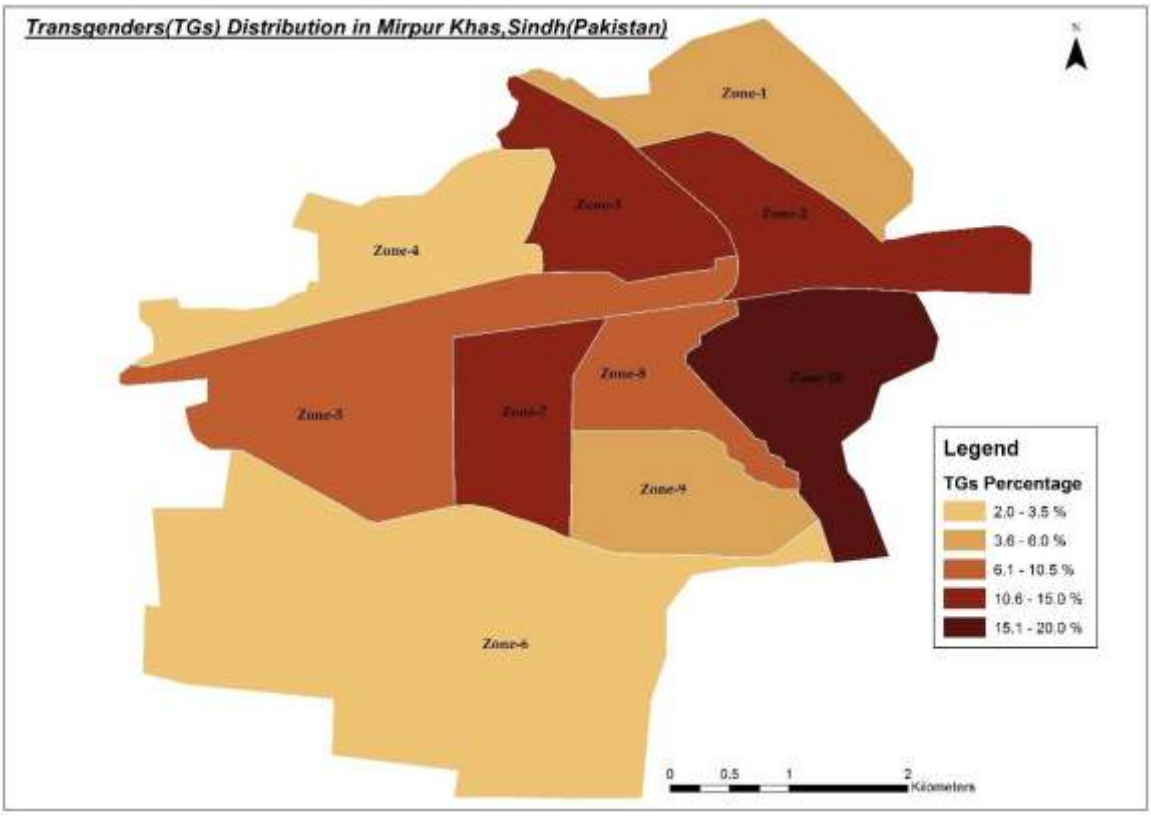

Transgenders(TGs) Distribution in Hyderabad,Sindh(Pakistan)
N
Legend
TGs Percentage
N/A
0.1 - 4.0 %
4.1 - 5.0 %
5.1 - 6.5 %
6.6 - 8.0 %
8.1 - 10.5 %
Zone 8
Zone 13
Zone 12
Zone 11
Zone 3
Zone 2
Zone 7
Zone 1
Zone 10
Cantonment
Zone 4
Zone 6
Zone 9
Zone 15
Zone 17
Zone 14
Zone 16
Zone 18
0
1
2
4
Kilometers

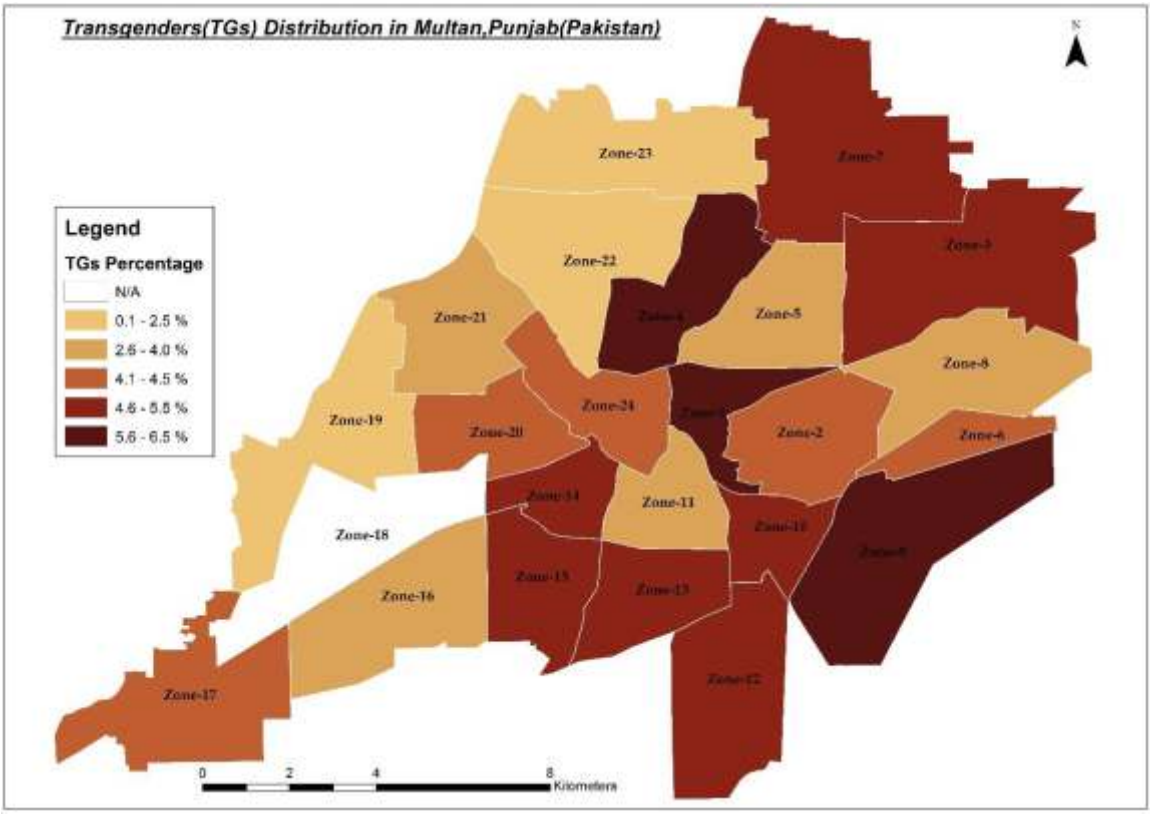

Transgenders(TGs) Distribution in Karachi,Sindh(Pakistan)
N
Legend
TGs Percentage
0.1 - 1.0 %
1.1 - 2.0 %
2.1 - 3.0 %
3.1 - 4.0 %
4.1 - 7.5 %
N/A
Zone-41
Zone-40
Zone-15
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-16
Zone-17
Zone-18
Zone-19
Zone-20
Zone-21
Zone-22
Zone-23
Zone-24
Zone-25
Zone-26
Zone-27
Zone-28
Zone-29
Zone-30
Zone-31
Zone-32
Zone-33
Zone-34
Zone-35
Zone-36
Zone-37
Zone-38
Zone-39
Zone-42
Zone-43
Zone-44
Zone-45
Zone-46
Zone-47
Zone-48
Zone-49
Zone-50
Zone-51
Zone-52
Malir Cantt
Airport
Faisal Cantt
Masroor Airbase
Mauripur Cantt
PAF Korangi
0
5
10
20
Kilometers

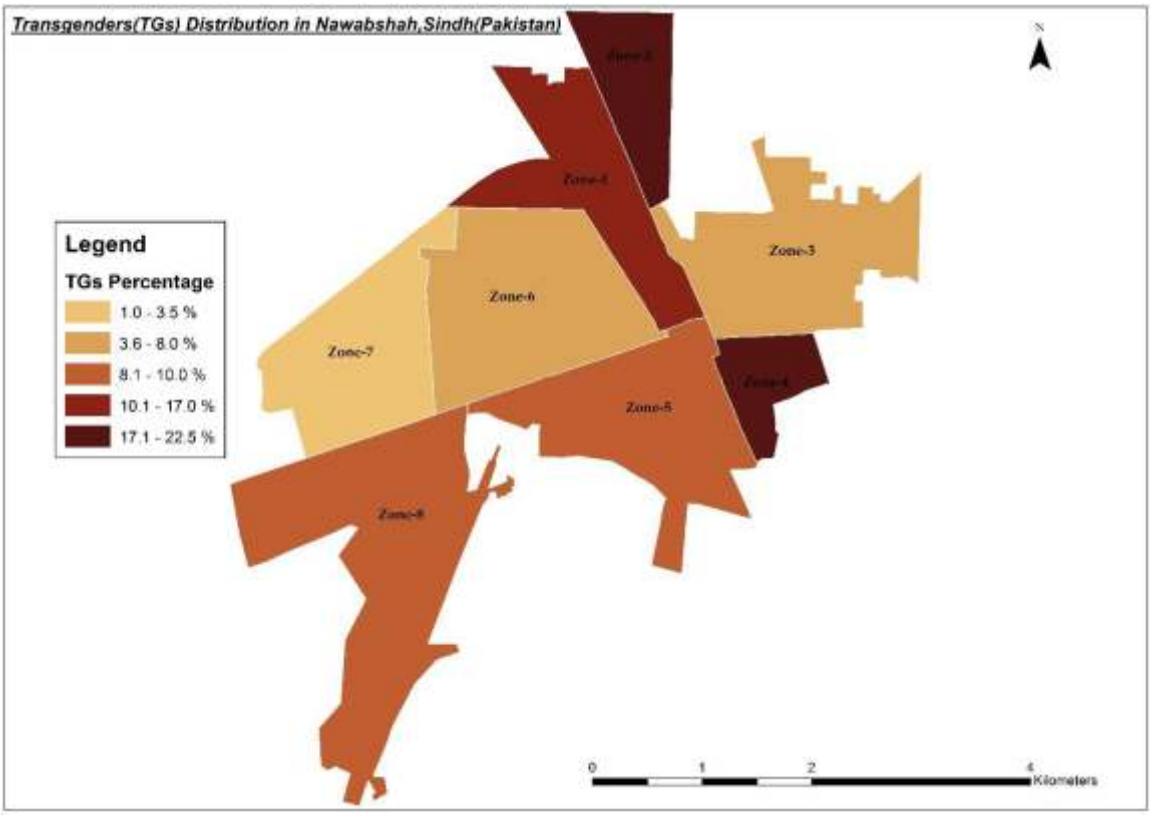

Transgenders(TGs) Distribution in Kasur,Punjab(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Legend
TGs Percentage
1.0 - 6.0 %
6.1 - 9.0 %
9.1 - 11.0 %
11.1 - 23.0 %
23.1 - 43.0 %
0
0.5
1
2
Kilometers

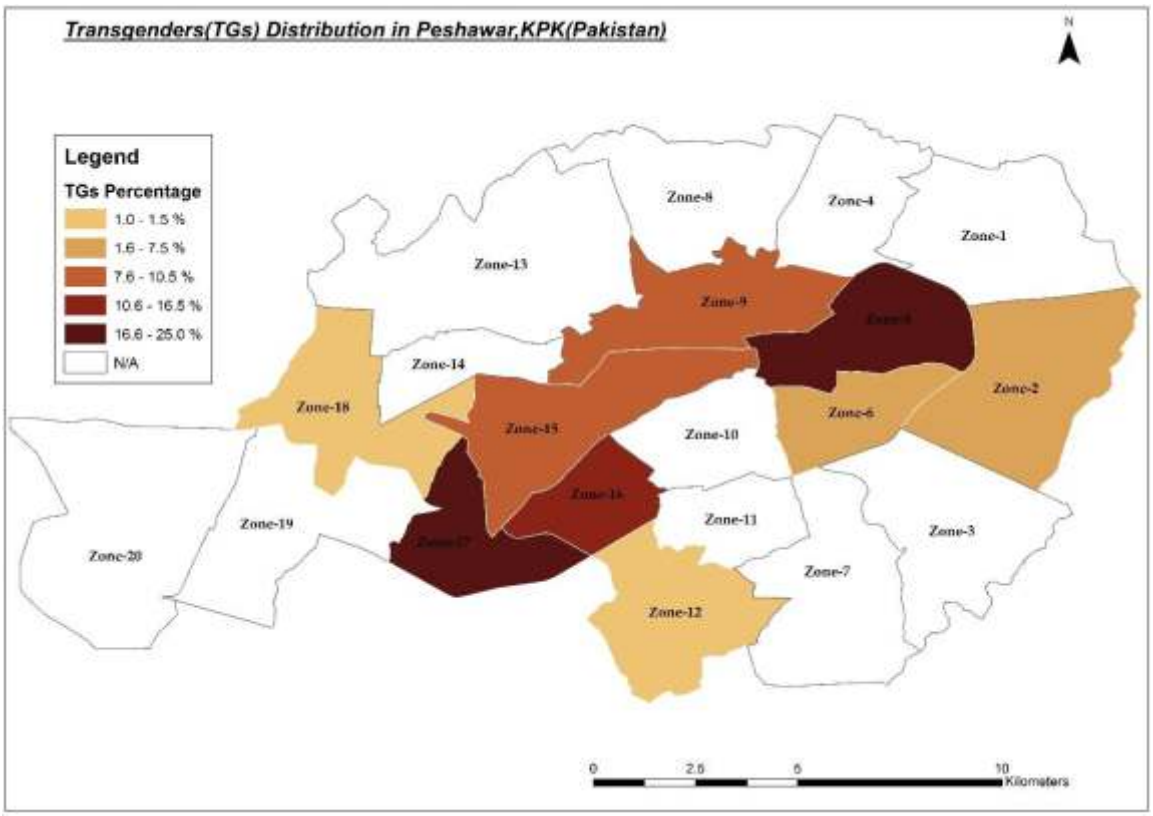

Transgenders(TGs) Distribution in Lahore,Punjab(Pakistan)
N
Legend
0.5 % - 1.5 %
1.6 - 2.0 %
2.1 - 3.0 %
3.1 - 4.0 %
4.1 - 6.5 %
N/A
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
Zone-17
Zone-18
Zone-19
Zone-20
Zone-21
Zone-22
Zone-23
Zone-24
Zone-25
Zone-26
Zone-27
Zone-28
Zone-29
Zone-30
Zone-31
Zone-32
Zone-33
Zone-34
Zone-35
Zone-36
Zone-37
Zone-38
Zone-39
Zone-40
Cantt
0
3
6
12
Kilometers

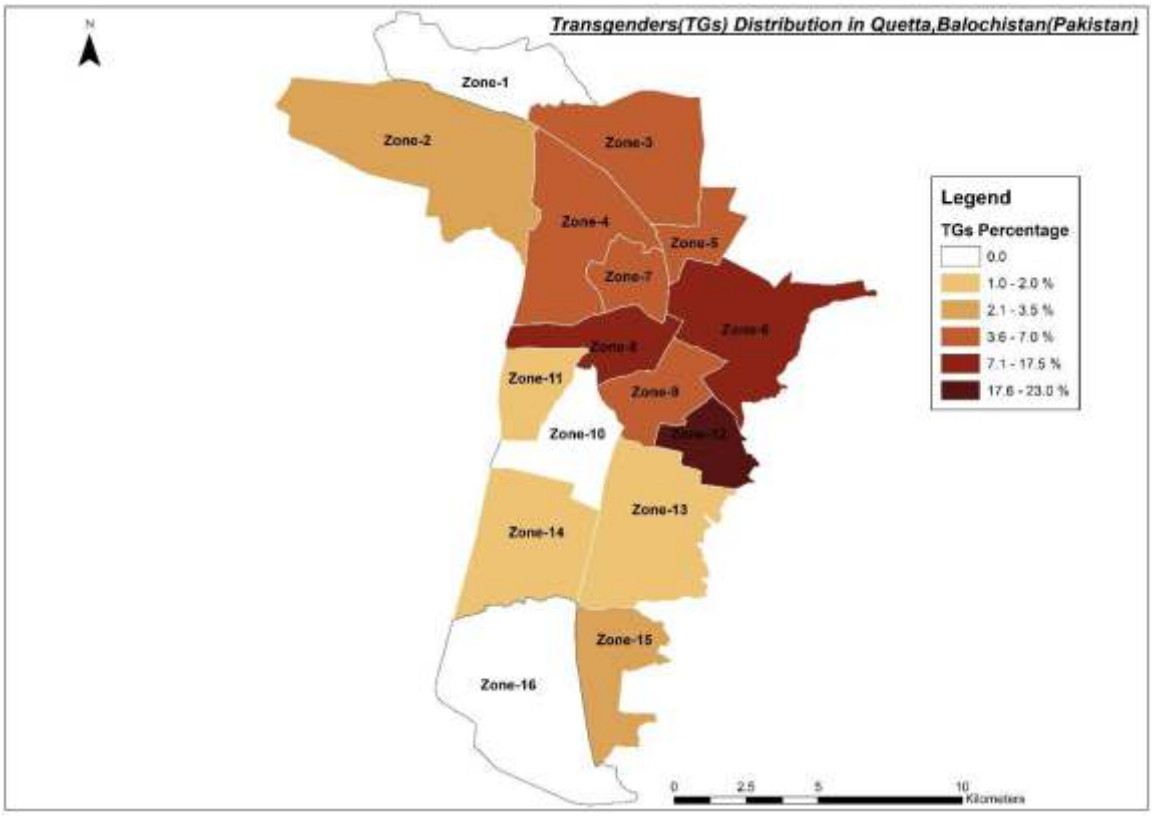

Transgenders(TGs) Distribution in Larkana,Sindh(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Legend
TGs Percentage
1.0 - 1.5 %
1.6 - 5.0 %
5.1 - 9.5 %
9.6 - 19.0 %
19.1 - 21.0 %
0
0.5
1
2
Kilometers

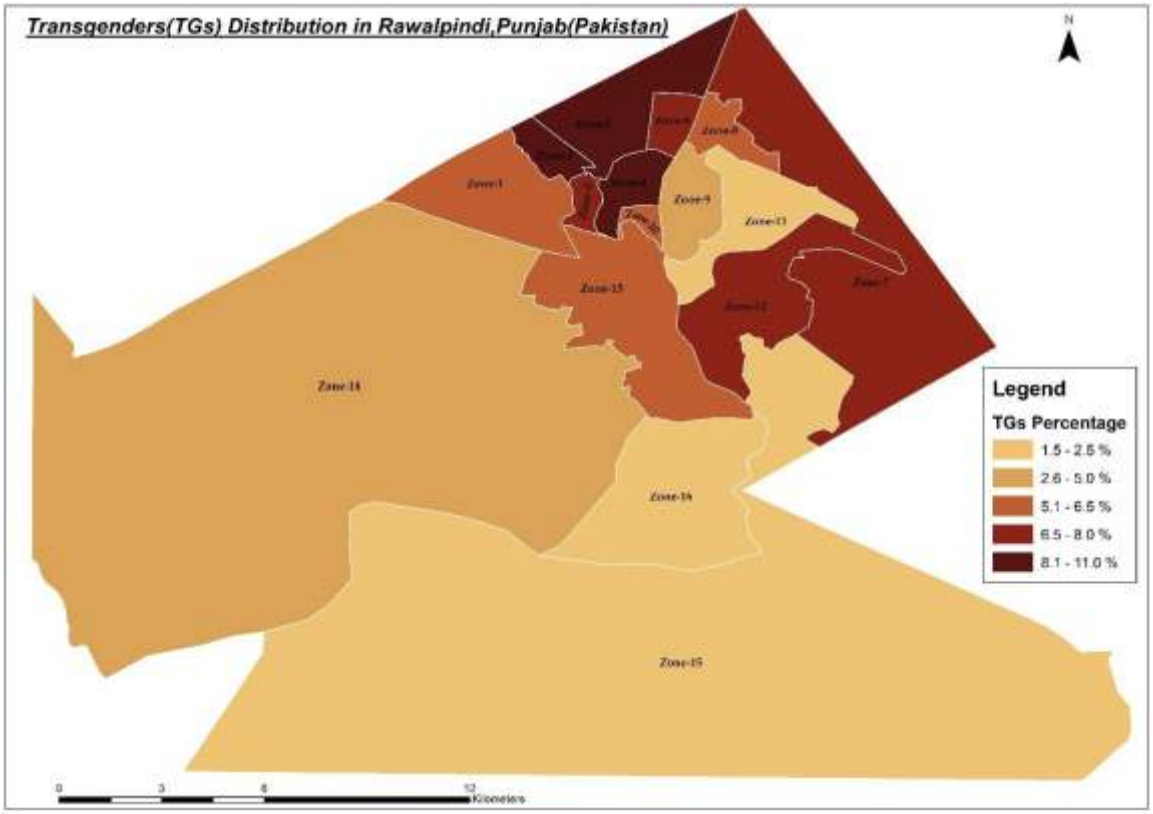

Transgenders(TGs) Distribution in Mirpur Khas,Sindh(Pakistan)
N
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Legend
TGs Percentage
2.0 - 3.5 %
3.6 - 6.0 %
6.1 - 10.5 %
10.6 - 15.0 %
15.1 - 20.0 %
0
0.5
1
2
Kilometers

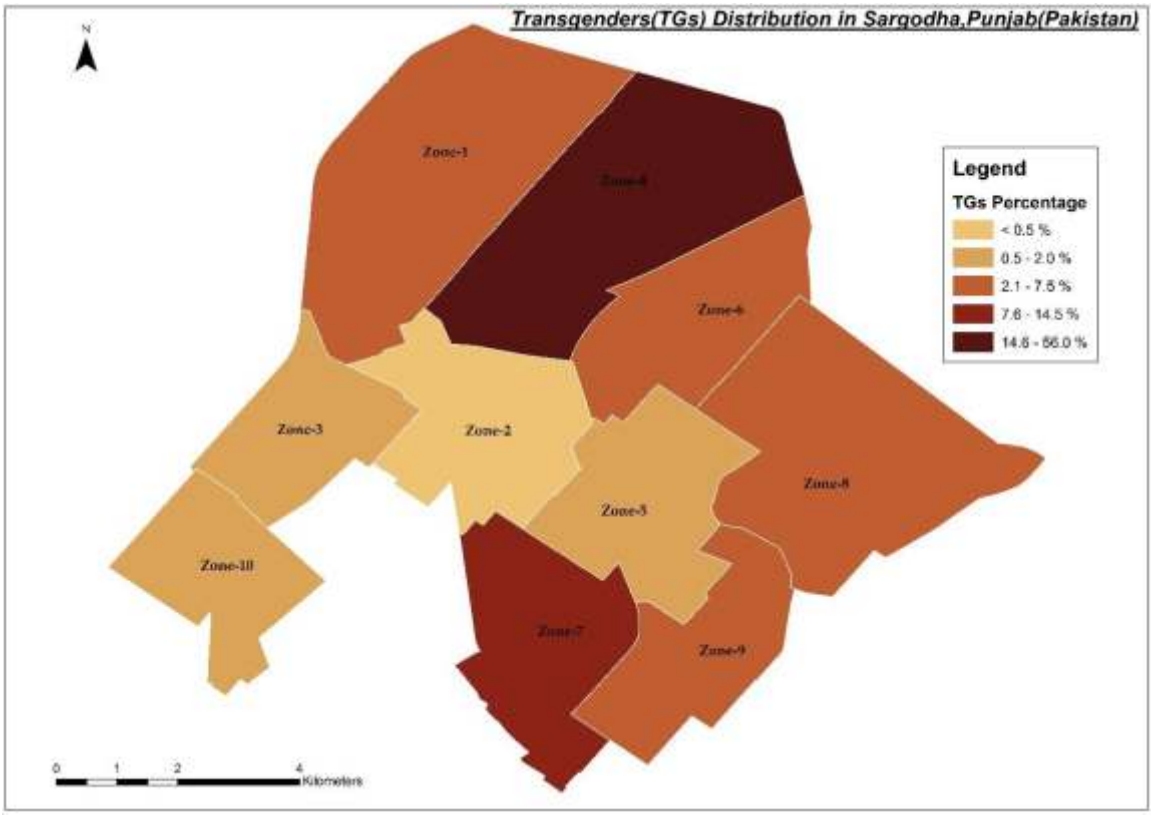

Transgenders(TGs) Distribution in Multan,Punjab(Pakistan)
N
Legend
TGs Percentage
N/A
0.1 - 2.5 %
2.6 - 4.0 %
4.1 - 4.5 %
4.6 - 5.5 %
5.6 - 6.5 %
Zone-23
Zone-7
Zone-22
Zone-3
Zone-21
Zone-5
Zone-8
Zone-19
Zone-20
Zone-24
Zone-2
Zone-6
Zone-14
Zone-11
Zone-18
Zone-15
Zone-13
Zone-16
Zone-17
Zone-12
0
2
4
8
Kilometers

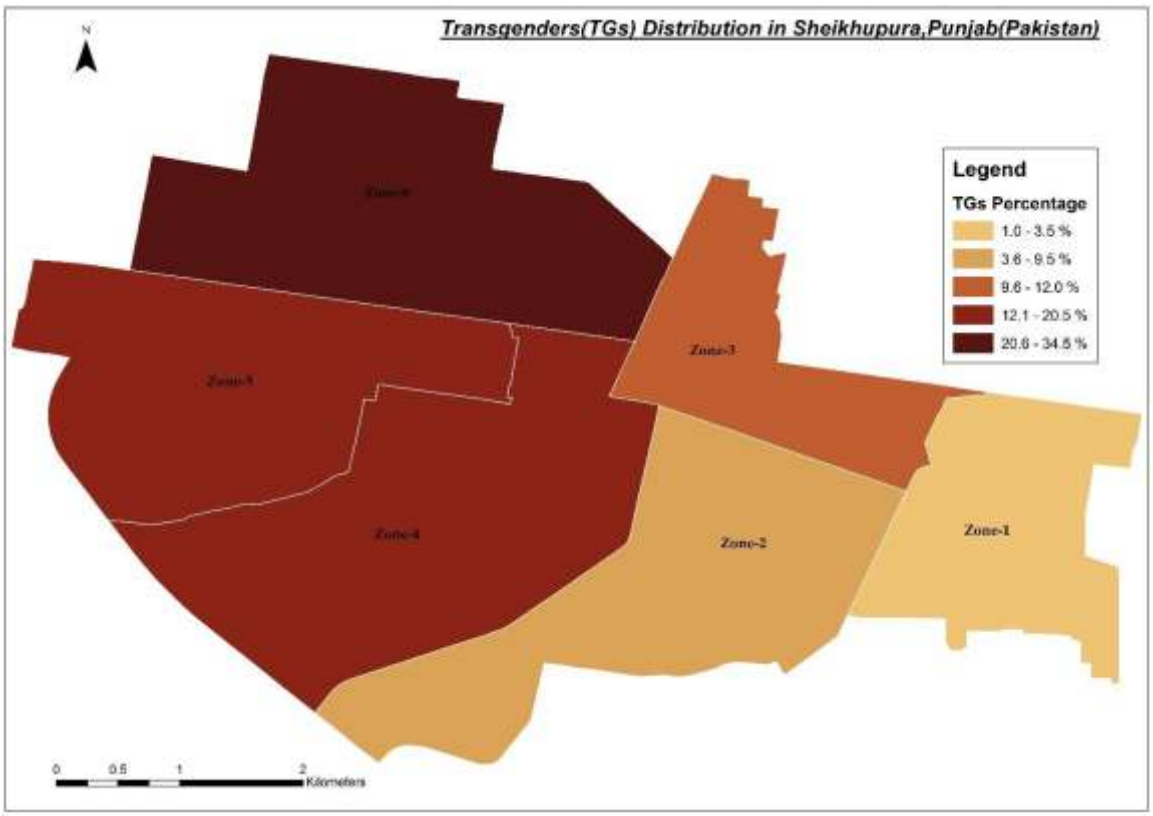

Transgenders(TGs) Distribution in Nawabshah,Sindh(Pakistan)
N
Legend
TGs Percentage
1.0 - 3.5 %
3.6 - 8.0 %
8.1 - 10.0 %
10.1 - 17.0 %
17.1 - 22.5 %
Zone-3
Zone-6
Zone-7
Zone-5
Zone-8
0
1
2
4
Kilometers

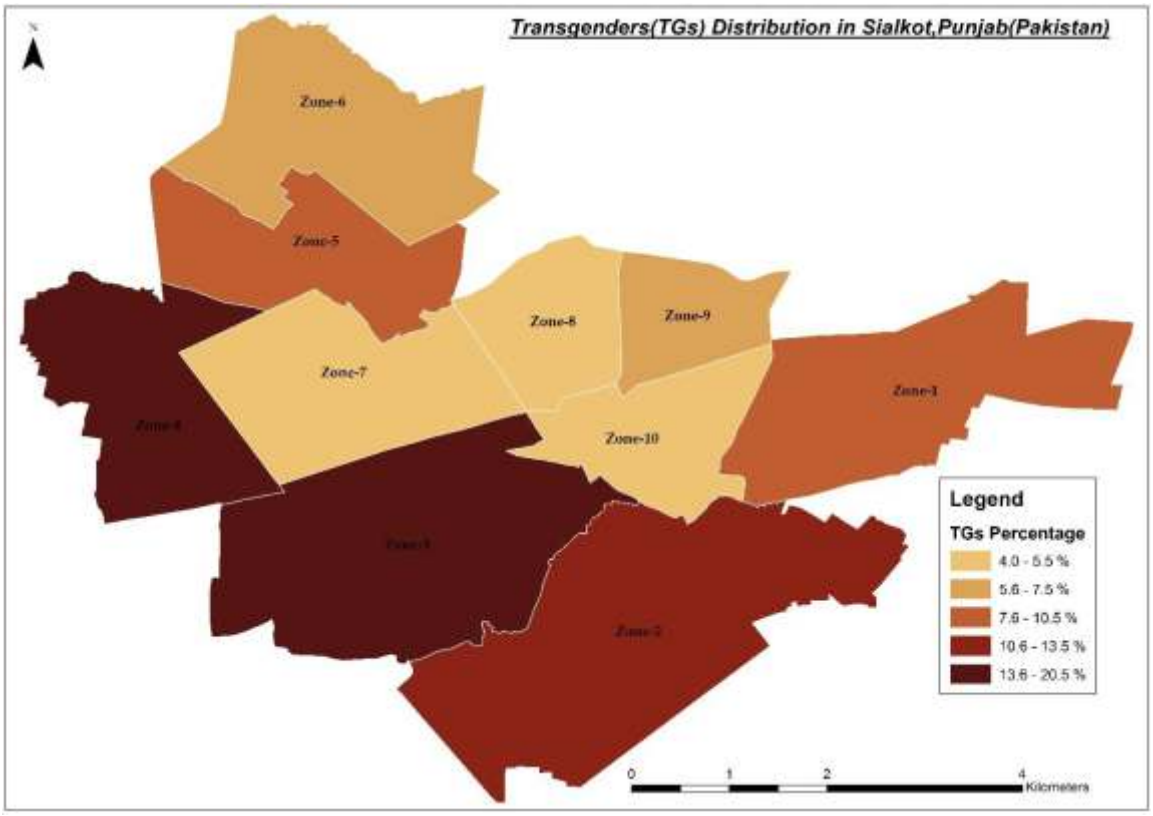

Transgenders(TGs) Distribution in Peshawar,KPK(Pakistan)
N
Legend
TGs Percentage
1.0 - 1.5 %
1.6 - 7.5 %
7.6 - 10.5 %
10.6 - 16.5 %
16.6 - 25.0 %
N/A
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
Zone-17
Zone-18
Zone-19
Zone-20
0
2.5
5
10
Kilometers

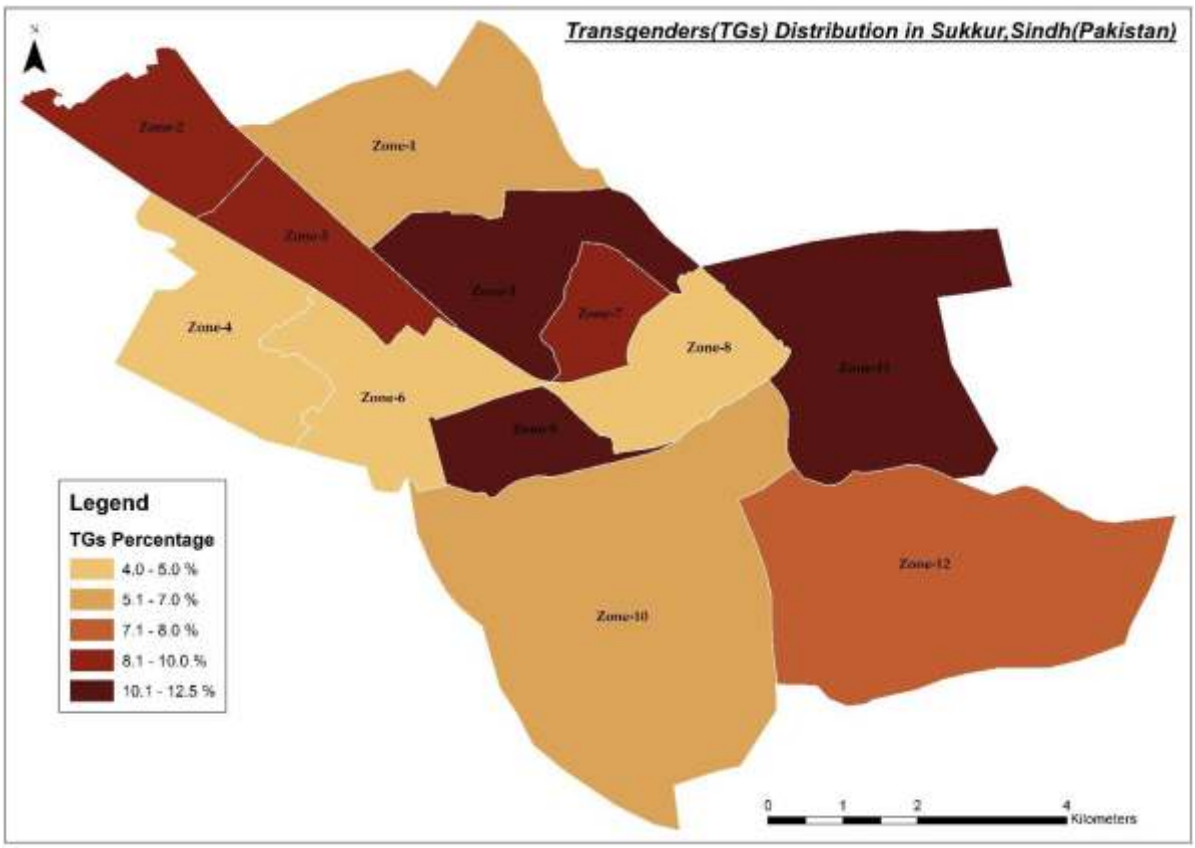

Transgenders(TGs) Distribution in Quetta,Balochistan(Pakistan)
N
Legend
TGs Percentage
0.0
1.0 - 2.0 %
2.1 - 3.5 %
3.6 - 7.0 %
7.1 - 17.5 %
17.6 - 23.0 %
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
0
2.5
5
10
Kilometers

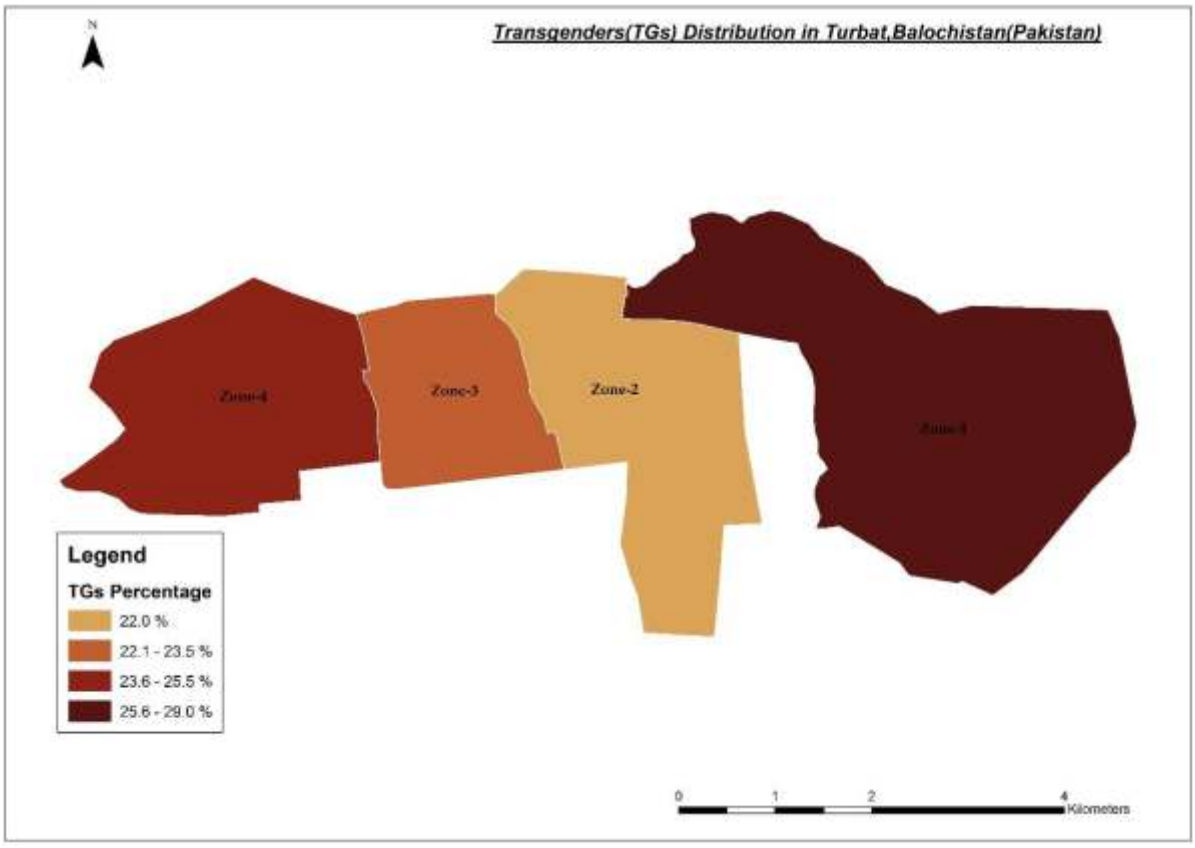

Transgenders(TGs) Distribution in Rawalpindi,Punjab(Pakistan)
N
Zone-1
Zone-9
Zone-13
Zone-15
Zone-12
Zone-7
Zone-14
Zone-16
Zone-15
Legend
TGs Percentage
1.5 - 2.5 %
2.6 - 5.0 %
5.1 - 6.5 %
6.5 - 8.0 %
8.1 - 11.0 %
0
3
6
12
Kilometers


Transgenders(TGs) Distribution in Sargodha,Punjab(Pakistan)
N
Zone-1
Zone-6
Zone-3
Zone-2
Zone-5
Zone-8
Zone-10
Zone-7
Zone-9
Legend
TGs Percentage
< 0.5 %
0.5 - 2.0 %
2.1 - 7.5 %
7.6 - 14.5 %
14.6 - 66.0 %
0
1
2
4
Kilometers


Transgenders(TGs) Distribution in Sheikhupura,Punjab(Pakistan)
N
Legend
TGs Percentage
1.0 - 3.5 %
3.6 - 9.5 %
9.6 - 12.0 %
12.1 - 20.5 %
20.6 - 34.5 %
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
0 0.5 1 2
Kilometers


Transgenders(TGs) Distribution in Sialkot,Punjab(Pakistan)
N
Legend
TGs Percentage
4.0 - 5.5 %
5.6 - 7.5 %
7.6 - 10.5 %
10.6 - 13.5 %
13.6 - 20.5 %
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
0 1 2 4
Kilometers


Transgenders(TGs) Distribution in Sukkur,Sindh(Pakistan)
N
Zone-1
Zone-4
Zone-6
Zone-8
Zone-10
Zone-12
Legend
TGs Percentage
4.0 - 5.0 %
5.1 - 7.0 %
7.1 - 8.0 %
8.1 - 10.0 %
10.1 - 12.5 %
0
1
2
4
Kilometers


Transgenders(TGs) Distribution in Turbat,Balochistan(Pakistan)
N
Zone-3
Zone-2
Legend
TGs Percentage
22.0 %
22.1 - 23.5 %
23.6 - 25.5 %
25.6 - 29.0 %
0
1
2
4
Kilometers

## 6.2 Zone wise estimates of TGs in the cities mapped

Table 6.2 presents the estimated number of TGs along with the number of spots where they congregate, in all different zones of the cities that were mapped for this study. Programs can use this information extensively to target zones where services could be installed and provided to these populations.

Table 6.2: Estimated Number of TGs in various zones of the cities mapped, 2016.

| City | Zone | Spots | Min | Max |
|---|---|---|---|---|
| Bahawalpur | 1 | 18 | 251 | 368 |
| | 2 | 16 | 165 | 256 |
| | 3 | 19 | 142 | 249 |
| | 4 | 11 | 215 | 284 |
| | 5 | 1 | 71 | 109 |
| | 6 | 1 | 182 | 233 |
| | 7 | | 16 | 25 |
| | 8 | | 334 | 396 |
| | 9 | 1 | 206 | 245 |
| | 10 | 2 | 168 | 215 |
| | 11 | 1 | 114 | 150 |
| | 12 | | 141 | 176 |
| Bannu | 1 | 6 | 22 | 29 |
| | 2 | 7 | 44 | 52 |
| | 3 | 2 | 3 | 5 |
| | 5 | 1 | 1 | 2 |
| | 6 | 1 | 2 | 3 |
| DG Khan | 1 | 1 | 2 | 3 |
| | 2 | 5 | 12 | 23 |
| | 3 | 1 | 12 | 18 |
| | 4 | 1 | 2 | 4 |
| | 5 | 18 | 68 | 111 |
| | 6 | 3 | 5 | 11 |
| Faisalabad | 1 | 21 | 93 | 144 |
| | 2 | 10 | 156 | 287 |
| | 3 | 10 | 49 | 98 |
| | 4 | 9 | 162 | 283 |

| City | Zone | Spots | Min | Max |
|---|---|---|---|---|
| Kasoor | 1 | 15 | 93 | 114 |
| | 2 | 14 | 73 | 93 |
| | 3 | 5 | 66 | 86 |
| | 4 | 30 | 189 | 242 |
| | 5 | 14 | 47 | 63 |
| | 6 | 39 | 350 | 458 |
| Lahore | 1 | 12 | 173 | 212 |
| | 2 | 24 | 270 | 334 |
| | 3 | 26 | 288 | 364 |
| | 4 | 15 | 128 | 160 |
| | 5 | 19 | 57 | 78 |
| | 6 | 31 | 271 | 356 |
| | 7 | 34 | 262 | 342 |
| | 8 | 31 | 141 | 192 |
| | 9 | 23 | 224 | 274 |
| | 10 | 22 | 101 | 140 |
| | 11 | 6 | 90 | 115 |
| | 12 | 23 | 127 | 169 |
| | 13 | 20 | 140 | 191 |
| | 14 | 24 | 154 | 196 |
| | 15 | 23 | 183 | 230 |
| | 16 | 22 | 204 | 255 |
| | 17 | 9 | 53 | 64 |
| | 18 | 17 | 47 | 63 |
| | 19 | 20 | 68 | 88 |
| | 20 | 33 | 130 | 181 |
| | 21 | 14 | 103 | 137 |

| | | | | |
|---|---|---|---|---|
| | 5 | 8 | 65 | 117 |
| | 6 | 7 | 116 | 219 |
| | 7 | 9 | 56 | 93 |
| | 8 | 3 | 147 | 261 |
| | 9 | 8 | 55 | 92 |
| | 10 | 12 | 168 | 318 |
| | 11 | 8 | 83 | 140 |
| | 12 | 5 | 151 | 263 |
| | 13 | 5 | 66 | 122 |
| | 14 | 5 | 123 | 202 |
| | 15 | 12 | 78 | 130 |
| | 16 | 9 | 81 | 125 |
| | 17 | 14 | 58 | 112 |
| | 18 | 11 | 95 | 180 |
| | 19 | 8 | 55 | 91 |
| | 20 | 14 | 95 | 189 |
| | 21 | 7 | 46 | 88 |
| | 22 | 4 | 73 | 134 |
| | 23 | 9 | 82 | 157 |
| | 24 | 8 | 72 | 149 |
| | 25 | 8 | 43 | 78 |
| | 26 | 10 | 86 | 166 |
| | 27 | 9 | 41 | 74 |
| | 28 | 11 | 75 | 147 |
| Gujranwala | 1 | 7 | 32 | 39 |
| | 2 | 10 | 31 | 44 |
| | 3 | 10 | 42 | 51 |
| | 4 | 17 | 65 | 83 |
| | 5 | 20 | 68 | 89 |
| | 6 | 13 | 38 | 58 |
| | 7 | 13 | 58 | 75 |
| | 8 | 11 | 36 | 51 |
| | 9 | 3 | 15 | 18 |
| | 10 | 15 | 67 | 84 |
| | 11 | 12 | 61 | 83 |
| | 22 | 29 | 171 | 223 |
| | 23 | 37 | 356 | 435 |
| | 24 | 20 | 190 | 235 |
| | 25 | 20 | 204 | 256 |
| | 26 | 14 | 179 | 219 |
| | 27 | 18 | 48 | 66 |
| | 28 | 22 | 103 | 126 |
| | 29 | 21 | 135 | 197 |
| | 30 | 17 | 54 | 79 |
| | 31 | 19 | 73 | 109 |
| | 32 | 17 | 139 | 188 |
| | 33 | 15 | 82 | 119 |
| | 34 | 9 | 74 | 99 |
| | 35 | 18 | 90 | 133 |
| | 36 | 8 | 84 | 121 |
| | 37 | 20 | 52 | 74 |
| | 38 | 12 | 34 | 52 |
| | 39 | 17 | 46 | 67 |
| | 40 | 14 | 27 | 41 |
| Larkana | 1 | 12 | 99 | 160 |
| | 2 | 14 | 136 | 204 |
| | 3 | 35 | 282 | 376 |
| | 4 | 6 | 55 | 75 |
| | 5 | 15 | 141 | 197 |
| | 6 | 3 | 19 | 37 |
| | 7 | 9 | 74 | 107 |
| | 8 | 40 | 280 | 390 |
| | 9 | 6 | 72 | 93 |
| | 10 | 37 | 322 | 422 |
| Mirpur Khas | 1 | 8 | 59 | 78 |
| | 2 | 11 | 139 | 176 |
| | 3 | 7 | 148 | 182 |
| | 4 | 6 | 35 | 46 |
| | 5 | 9 | 95 | 124 |
| | 6 | 3 | 21 | 25 |

| | | | | |
|---|---|---|---|---|
| | 12 | 10 | 29 | 45 |
| | 13 | 13 | 35 | 50 |
| | 14 | 19 | 76 | 193 |
| | 15 | 24 | 115 | 142 |
| | 16 | 10 | 26 | 42 |
| Gujrat | 1 | 12 | 66 | 88 |
| | 2 | 8 | 42 | 58 |
| | 3 | 1 | 4 | 5 |
| | 4 | 4 | 34 | 44 |
| | 5 | 4 | 41 | 54 |
| | 6 | 4 | 24 | 29 |
| | 7 | 2 | 11 | 17 |
| Hyderabad | 1 | 15 | 131 | 172 |
| | 2 | 12 | 113 | 132 |
| | 3 | 15 | 139 | 167 |
| | 4 | 10 | 108 | 128 |
| | 5 | 9 | 235 | 299 |
| | 6 | 13 | 173 | 208 |
| | 7 | 7 | 139 | 180 |
| | 8 | 9 | 69 | 83 |
| | 9 | 15 | 151 | 184 |
| | 10 | 11 | 90 | 105 |
| | 11 | 12 | 117 | 140 |
| | 12 | 10 | 84 | 101 |
| | 13 | 10 | 88 | 104 |
| | 14 | 13 | 110 | 133 |
| | 15 | 8 | 119 | 140 |
| | 16 | 8 | 85 | 102 |
| | 17 | 21 | 187 | 225 |
| | 18 | 22 | 156 | 187 |
| Jhelum | 1 | 12 | 159 | 210 |
| | 2 | 6 | 75 | 102 |
| | 3 | 1 | 68 | 98 |
| | 4 | 7 | 37 | 54 |
| | 5 | 7 | 70 | 96 |
| | 7 | 4 | 107 | 174 |
| | 8 | 5 | 102 | 129 |
| | 9 | 7 | 58 | 75 |
| | 10 | 7 | 194 | 245 |
| Multan | 1 | 43 | 473 | 666 |
| | 2 | 47 | 270 | 444 |
| | 3 | 47 | 329 | 497 |
| | 4 | 103 | 391 | 639 |
| | 5 | 38 | 246 | 340 |
| | 6 | 31 | 278 | 406 |
| | 7 | 34 | 327 | 600 |
| | 8 | 35 | 255 | 366 |
| | 9 | 48 | 428 | 597 |
| | 10 | 35 | 370 | 516 |
| | 11 | 33 | 264 | 380 |
| | 12 | 34 | 361 | 486 |
| | 13 | 37 | 348 | 468 |
| | 14 | 31 | 350 | 535 |
| | 15 | 12 | 341 | 552 |
| | 16 | 38 | 248 | 375 |
| | 17 | 38 | 264 | 425 |
| | 19 | 7 | 112 | 177 |
| | 20 | 43 | 301 | 444 |
| | 21 | 31 | 250 | 379 |
| | 22 | 32 | 178 | 242 |
| | 23 | 39 | 152 | 235 |
| | 24 | 48 | 286 | 446 |
| Nawabshah | 1 | 8 | 70 | 90 |
| | 2 | 6 | 88 | 121 |
| | 3 | 2 | 32 | 45 |
| | 4 | 14 | 91 | 124 |
| | 5 | 3 | 42 | 53 |
| | 6 | 3 | 27 | 36 |
| | 7 | 5 | 14 | 22 |
| | 8 | 4 | 40 | 53 |

| | | | | |
|---|---|---|---|---|
| Karachi | 1 | 18 | 305 | 395 |
| | 2 | 22 | 89 | 123 |
| | 3 | 17 | 200 | 256 |
| | 4 | 16 | 130 | 171 |
| | 5 | 22 | 119 | 168 |
| | 6 | 4 | 140 | 185 |
| | 7 | 18 | 202 | 266 |
| | 8 | 26 | 206 | 278 |
| | 9 | 14 | 269 | 343 |
| | 10 | 16 | 48 | 74 |
| | 11 | 16 | 121 | 172 |
| | 12 | 29 | 214 | 291 |
| | 13 | 12 | 976 | 1,221 |
| | 14 | 34 | 258 | 351 |
| | 15 | 28 | 101 | 157 |
| | 16 | 22 | 197 | 259 |
| | 17 | 21 | 32 | 56 |
| | 18 | 9 | 80 | 106 |
| | 19 | 21 | 173 | 233 |
| | 20 | 21 | 153 | 219 |
| | 21 | 21 | 530 | 592 |
| | 22 | 27 | 484 | 622 |
| | 23 | 8 | 96 | 126 |
| | 24 | 12 | 78 | 100 |
| | 25 | 17 | 81 | 104 |
| | 26 | 12 | 135 | 194 |
| | 27 | 18 | 208 | 292 |
| | 28 | 21 | 167 | 236 |
| | 29 | 14 | 226 | 291 |
| | 30 | 15 | 167 | 226 |
| | 31 | 16 | 168 | 212 |
| | 32 | 19 | 182 | 240 |
| | 33 | 13 | 209 | 267 |
| | 34 | 17 | 172 | 254 |
| | 35 | 20 | 243 | 347 |

| | | | | |
|---|---|---|---|---|
| Peshawar | 2 | 2 | 16 | 31 |
| | 5 | 1 | 50 | 103 |
| | 6 | 1 | 18 | 25 |
| | 9 | | 25 | 39 |
| | 12 | | 3 | 5 |
| | 15 | | 23 | 32 |
| | 16 | | 40 | 60 |
| | 17 | | 60 | 72 |
| | 19 | | 3 | 5 |
| Quetta | 2 | 2 | 23 | 25 |
| | 3 | 3 | 50 | 59 |
| | 4 | 2 | 39 | 51 |
| | 5 | 3 | 40 | 49 |
| | 6 | 15 | 118 | 143 |
| | 7 | 1 | 47 | 62 |
| | 8 | 3 | 121 | 151 |
| | 9 | 6 | 49 | 60 |
| | 11 | | 7 | 10 |
| | 12 | | 169 | 194 |
| | 13 | | 9 | 11 |
| | 14 | 1 | 14 | 15 |
| | 15 | 1 | 22 | 31 |
| Rawalpindi | 1 | 32 | 147 | 247 |
| | 2 | 29 | 207 | 319 |
| | 3 | 41 | 284 | 432 |
| | 4 | 45 | 268 | 455 |
| | 5 | 53 | 289 | 415 |
| | 6 | 18 | 207 | 283 |
| | 7 | 24 | 208 | 298 |
| | 8 | 26 | 152 | 217 |
| | 9 | 18 | 111 | 167 |
| | 10 | 20 | 158 | 235 |
| | 11 | 11 | 60 | 93 |
| | 12 | 28 | 178 | 280 |
| | 13 | 16 | 171 | 249 |

| | | | | |
|---|---|---|---|---|
| | 36 | 17 | 405 | 535 |
| | 37 | 20 | 311 | 438 |
| | 38 | 21 | 290 | 360 |
| | 39 | 22 | 459 | 589 |
| | 40 | 14 | 41 | 61 |
| | 41 | 13 | 91 | 128 |
| | 42 | 27 | 372 | 476 |
| | 43 | 26 | 510 | 612 |
| | 44 | 23 | 318 | 442 |
| | 45 | 21 | 250 | 331 |
| | 46 | 21 | 325 | 453 |
| | 47 | 24 | 290 | 373 |
| | 48 | 39 | 254 | 341 |
| | 49 | 20 | 261 | 344 |
| | 50 | 29 | 172 | 229 |
| | 51 | 19 | 339 | 466 |
| | 52 | 51 | 403 | 561 |
| Sukkhur | 1 | 15 | 151 | 194 |
| | 2 | 17 | 212 | 261 |
| | 3 | 15 | 266 | 310 |
| | 4 | 11 | 106 | 133 |
| | 5 | 13 | 210 | 244 |
| | 6 | 10 | 105 | 126 |
| | 7 | 10 | 230 | 277 |
| | 8 | 13 | 100 | 128 |
| | 9 | 16 | 297 | 333 |
| | 10 | 11 | 143 | 175 |
| | 11 | 26 | 250 | 305 |
| | 12 | 17 | 172 | 223 |
| Turbat | 1 | 3 | 24 | 27 |
| | 2 | 5 | 17 | 22 |
| | 3 | 3 | 19 | 23 |
| | 4 | 3 | 21 | 24 |
| | 14 | 29 | 124 | 197 |
| | 15 | 12 | 49 | 76 |
| | 16 | 16 | 40 | 88 |
| Sargodha | 1 | 11 | 71 | 95 |
| | 2 | 1 | 5 | 6 |
| | 3 | 5 | 31 | 38 |
| | 4 | 60 | 910 | 1,121 |
| | 5 | 4 | 30 | 36 |
| | 6 | 17 | 100 | 127 |
| | 7 | 31 | 229 | 296 |
| | 8 | 15 | 93 | 113 |
| | 9 | 16 | 116 | 152 |
| | 10 | 6 | 27 | 35 |
| Sheikhupura | 1 | 2 | 38 | 51 |
| | 2 | 4 | 105 | 129 |
| | 3 | 17 | 135 | 172 |
| | 4 | 14 | 222 | 275 |
| | 5 | 7 | 226 | 288 |
| | 6 | 13 | 384 | 480 |
| | 8 | | 4 | 6 |
| Sialkot | 1 | 10 | 56 | 70 |
| | 2 | 8 | 75 | 90 |
| | 3 | 13 | 90 | 115 |
| | 4 | 13 | 106 | 138 |
| | 5 | 5 | 46 | 62 |
| | 6 | 6 | 39 | 54 |
| | 7 | 5 | 27 | 36 |
| | 8 | 5 | 22 | 30 |
| | 9 | 7 | 35 | 45 |
| | 10 | 7 | 29 | 39 |

## 6.3 Distribution of TG Spots by typology

Unlike female sex workers, where the spots presented an array of typologies, the spots where TGs congregate constitute of 03 major typologies. The major typology identified was street based TGs which formed approx 38% of the total TGs in Pakistan. The other leading typologies were Dera based TGs (34%) and those TG living in their homes (21%). The distribution of spots into various typologies is shown in the figure 6.2 and further shown by each individual city mapped in Fig 6.3

Figure 6.2 : Distribution of Spot Typology where TGs congregate in Pakistan, 2016

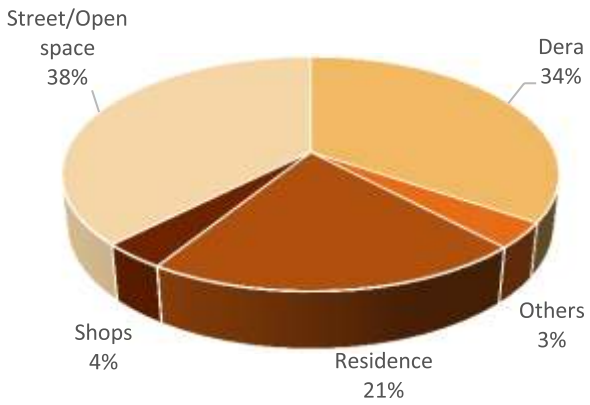
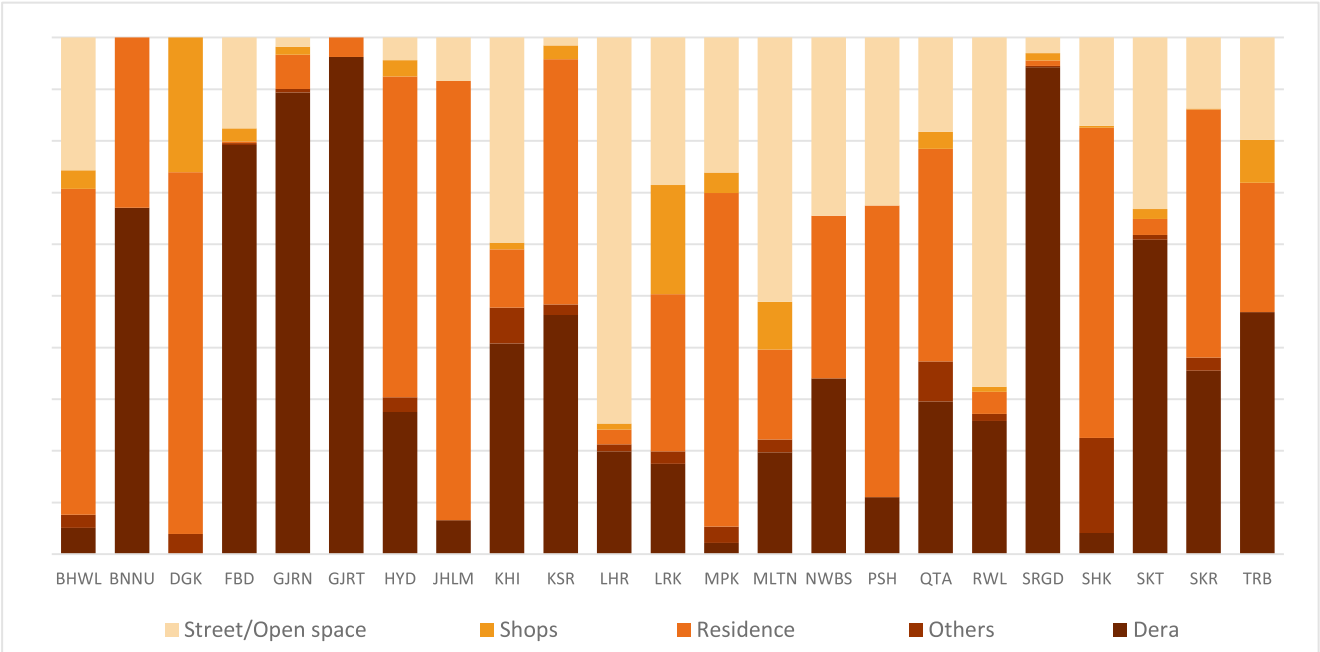



Figure 6.2 : Distribution of Spot Typology where TGs congregate by cities in Pakistan, 2016



## 6.4 Estimates of TGs by Spot typology

Of the total 9,820 spots identified through this mapping, 4,341 were spots at the streets/open spaces, which formed the largest typology of spots. Approximately, an estimated number of 31,790 TGs operate through such spots. This was followed by 3,031 Deras mapped with an estimated number of 10,956 TGs. Approximately 6,625 TGs were mapped from 1,798 residential spots. See table 6.3 for details

Table 6.3: Estimates of TGs by spot typology in 23 cities mapped, 2016

| Spot type | No of spots | Min | Max | Avg |
|---|---|---|---|---|
| Dera | 3,031 | 9,238 | 12,674 | 10,956 |
| Others | 277 | 951 | 1,304 | 1,127 |
| Residence | 1,798 | 5,586 | 7,664 | 6,625 |
| Shops | 373 | 957 | 1,314 | 1,136 |
| Street/Open space | 4,341 | 10,073 | 13,820 | 11,947 |
| Grand Total | 9,820 | 26,804 | 36,776 | 31,790 |

Further analyses showed that the distribution of typology varied by cities mapped. Street based spots were the largest typology noted in Karachi (1,330 spots), Lahore (1,022), Multan (852 spots) and Rawalpindi (463 spots). Dera based TGSWs were predominantly found in Karachi (1,033 spots), Faisalabad (527 spots), Multan (272 spots), Lahore (214 spots), Sargodha (187 spots) and Gujranwala (178 spots). Among these cities, Deras were the primary spots in Faisalabad, Sargodha and Gujranwala. Residential spots were predominantly reported in Multan (297 spots), Karachi (277 spots), Bahawalpur (228 spots), Hyderabad (227 spots), Sukkhur (187 spots) and Sheikhupura (109 spots). Apart from Multan and Karachi, residential spots were the primary types of spots mapped from these cities.

Table 6.4: Distribution of TGs by spot typology in all cities Mapped

| City | typology | No of spots | Min Est | Max Est |
|---|---|---|---|---|
| Bahawalpur | Dera | 16 | 85 | 137 |
| | Others | 10 | 42 | 69 |
| | Residence | 228 | 1,347 | 1,708 |
| | Shops | 15 | 63 | 96 |

| | | | | |
|---|---|---|---|---|
| | Street/Open space | 98 | 468 | 695 |
| Bannu | Dera | 7 | 52 | 61 |
| | Residence | 10 | 20 | 30 |
| DG Khan | Others | 1 | 6 | 8 |
| | Residence | 28 | 78 | 137 |
| | Shops | 7 | 32 | 51 |
| Faisalabad | Dera | 527 | 1,896 | 3,532 |
| | Others | 4 | 11 | 16 |
| | Residence | 3 | 6 | 14 |
| | Shops | 29 | 71 | 115 |
| | Street/Open space | 176 | 488 | 783 |
| Gujranwala | Dera | 178 | 704 | 1,025 |
| | Others | 1 | 7 | 8 |
| | Residence | 29 | 56 | 76 |
| | Shops | 3 | 13 | 18 |
| | Street/Open space | 4 | 15 | 20 |
| Gujrat | Dera | 42 | 214 | 283 |
| | Residence | 1 | 9 | 11 |
| Hyderabad | Dera | 93 | 673 | 785 |
| | Others | 8 | 59 | 81 |
| | Residence | 227 | 1,450 | 1,773 |
| | Shops | 18 | 71 | 91 |
| | Street/Open space | 22 | 95 | 125 |
| Jhelum | Dera | 12 | 25 | 37 |
| | Residence | 81 | 353 | 477 |
| | Street/Open space | 15 | 32 | 47 |
| Karachi | Dera | 1,033 | 4,996 | 6,591 |
| | Others | 132 | 902 | 1,125 |
| | Residence | 277 | 1,465 | 1,820 |
| | Shops | 33 | 167 | 208 |
| | Street/Open space | 1,330 | 4,718 | 6,421 |
| Kasoor | Dera | 69 | 380 | 489 |
| | Others | 1 | 16 | 22 |
| | Residence | 45 | 389 | 502 |
| | Shops | 5 | 22 | 28 |

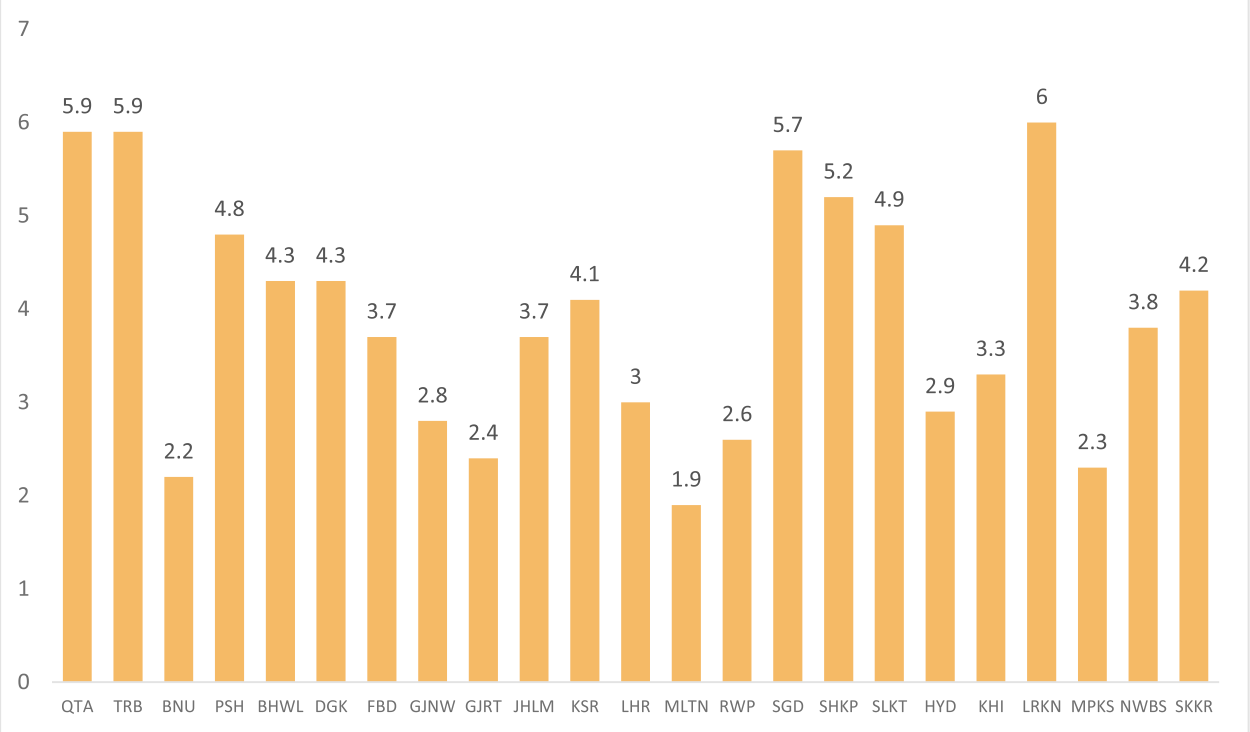
| | | | | |
|---|---|---|---|---|
| | Street/Open space | 5 | 11 | 16 |
| Lahore | Dera | 214 | 1,100 | 1,388 |
| | Others | 19 | 71 | 96 |
| | Residence | 34 | 157 | 200 |
| | Shops | 15 | 62 | 80 |
| | Street/Open space | 1,022 | 3,966 | 5,217 |
| Larkana | Dera | 32 | 256 | 360 |
| | Others | 6 | 36 | 50 |
| | Residence | 59 | 460 | 626 |
| | Shops | 35 | 313 | 436 |
| | Street/Open space | 57 | 416 | 588 |
| Mirpur Khas | Dera | 5 | 21 | 27 |
| | Others | 2 | 33 | 40 |
| | Residence | 70 | 605 | 809 |
| | Shops | 5 | 39 | 50 |
| | Street/Open space | 41 | 259 | 328 |
| Multan | Dera | 272 | 1,351 | 2,014 |
| | Others | 53 | 167 | 251 |
| | Residence | 297 | 1,226 | 1,783 |
| | Shops | 188 | 596 | 939 |
| | Street/Open space | 852 | 3,481 | 5,230 |
| Nawabshah | Dera | 29 | 141 | 185 |
| | Residence | 25 | 133 | 171 |
| | Street/Open space | 47 | 131 | 187 |
| Peshawar | Dera | 4 | 20 | 41 |
| | Residence | 26 | 147 | 210 |
| | Street/Open space | 18 | 72 | 121 |
| Quetta | Dera | 31 | 220 | 255 |
| | Others | 9 | 51 | 67 |
| | Residence | 28 | 298 | 355 |
| | Shops | 3 | 22 | 28 |
| | Street/Open space | 26 | 116 | 157 |
| Rawalpindi | Dera | 99 | 708 | 1,045 |
| | Others | 9 | 39 | 56 |
| | Residence | 23 | 118 | 172 |

| | | | | |
|---|---|---|---|---|
| | Shops | 7 | 29 | 41 |
| | Street/Open space | 463 | 1,758 | 2,738 |
| Sargodha | Dera | 187 | 1,523 | 1,903 |
| | Others | 1 | 3 | 5 |
| | Residence | 5 | 17 | 22 |
| | Shops | 5 | 22 | 28 |
| | Street/Open space | 14 | 47 | 61 |
| Sheikhupura | Dera | 5 | 48 | 57 |
| | Others | 11 | 213 | 258 |
| | Residence | 109 | 660 | 841 |
| | Shops | 1 | 4 | 5 |
| | Street/Open space | 29 | 188 | 240 |
| Sialkot | Dera | 60 | 323 | 414 |
| | Others | 1 | 5 | 6 |
| | Residence | 2 | 16 | 21 |
| | Shops | 2 | 9 | 13 |
| | Street/Open space | 44 | 173 | 225 |
| Sukkhur | Dera | 110 | 814 | 962 |
| | Others | 9 | 56 | 69 |
| | Residence | 187 | 1,088 | 1,300 |
| | Shops | 1 | 5 | 7 |
| | Street/Open space | 75 | 278 | 371 |
| Turbat | Dera | 6 | 38 | 45 |
| | Residence | 4 | 20 | 24 |
| | Shops | 1 | 7 | 8 |
| | Street/Open space | 3 | 16 | 19 |

## 6.5 Spot profiling

This section presents details pertaining to the spots mapped. This information is important from a program planning perspective and provides details about where TGSWs congregate and solicit clients and sexual partnerships. The overall spot size was reported to be small, with 3.2 TGs on an average operating from each spot. City wide analysis showed the largest spot sizes to be seen in Larkana (6.0), Quetta and Turbat (5.9) and Sargodha (5.7), while the smallest ones were reported for Multan (1.9), Bannu (2.2), Mir Pur Khas (2.3) and Gujrat (2.4). Fig 6.3 shows spot sizes for different cities that were mapped.

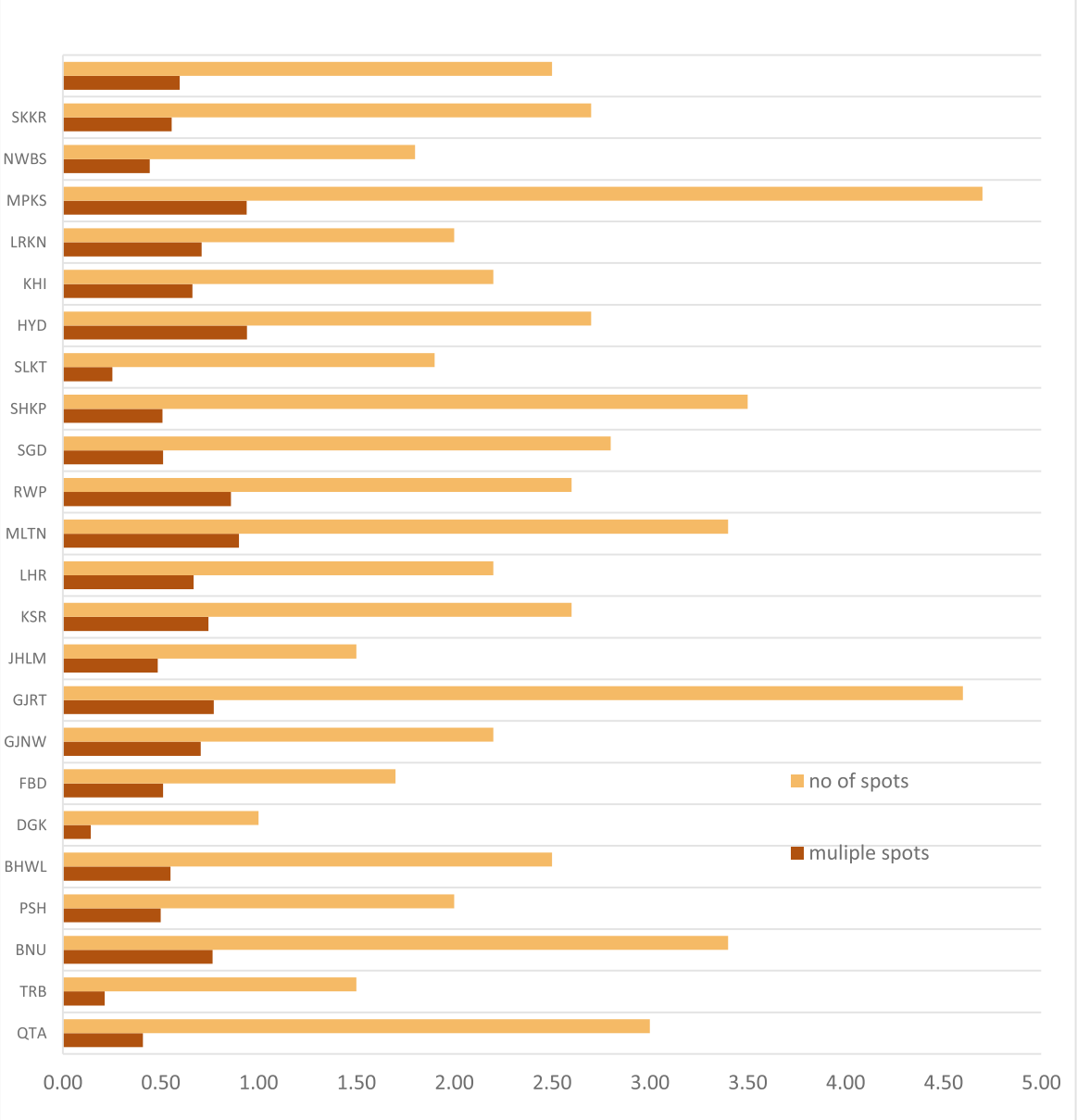
Fig 6.3 Spot sizes for TGs across various cities mapped in Pakistan, 2016




Based on the information collected in level 2 from primary key informants, we further looked into the spots to describe the operational dynamics of TGs in Pakistan and provide more information on the existing spots. TGSWs were found to be more mobile as compared to other KPs and use multiple spots. Moreover, there are chances of duplication, because TGs could be living in a dera, and could be counted at street spots as well.

To adjust for this duplications (i.e., TGs using more than one spot and thus to eliminate issues of double counting of same TG at different spots) TGs were inquired for how many spots they would usually go to. Almost all TGs from Hyderabad (94.1%) and Mir Pur Khas (94.0%), followed by 90% of TGs from Multan reported using more than one spot to solicit clients. Very few TGs from Dera Ghazi Khan (14.3%), Turbat (21.4%) and Sialkot (25.3%) reported going to more than one spot, meaning that in these cities TGs predominantly operated through on one spot. Further analyses shows that TGs in Mirpur Khas and Gujrat reported using 4.7 and 4.6 spots respectively, which was a lot higher than the average number of spots frequented overall. City wide results on use of multiple spots by TGs and the average number of spots frequented by each TG are provided in Figure 6.4.

Fig 6.4 Spot sizes for TGs across various cities mapped in Pakistan, 2016




## 6.6 Estimated mapped TGSWs on usual and peak days

Similar to the FSWs, number of TGs also change over peak days, and an increase of approx. 37% is reported. Overall estimates were reported at 23,168 TGSWs (ranging from 18,713 to 27,623) on usual days, which increase to 31,790 (ranging from 26,804 to 36,776). The largest estimates of TGSWs were reported for Karachi, with an estimated number of 6,978(8,106 to 5,850) TGSWs on usual days which increased to 9,123(10,381 to 7,856) TGSWs on peak days. The second largest estimates came from Lahore with 2,704 TGSWs estimated on a usual day and 3,936

TGSWs estimated on a peak day. Bannu, Turbat and Gujrat reported the lowest estimates for both usual and peak days comparative to the other cities mapped. The variation between usual and peak day estimates in these cities was also limited.

Table 6.5 : Usual and peak day estimates of TGs in the 23 cities mapped, 2016

| City | | Peak day estimates | | | Usual day estimates | | |
|---|---|---|---|---|---|---|---|
| | Spot No | Min | Max | Avg | Min | Max | Avg |
| Quetta | 97 | 516 | 629 | 573 | 475 | 595 | 535 |
| Turbat | 14 | 75 | 89 | 82 | 54 | 67 | 60 |
| Bannu | 17 | 33 | 42 | 38 | 26 | 36 | 31 |
| Peshawar | 48 | 179 | 279 | 229 | 129 | 216 | 173 |
| Bahawalpur | 367 | 1,343 | 1,812 | 1,578 | 991 | 1,420 | 1,206 |
| DG Khan | 36 | 116 | 196 | 156 | 94 | 147 | 121 |
| Faisalabad | 739 | 1,952 | 3,521 | 2,737 | 1,193 | 2,668 | 1,930 |
| Gujranwala | 215 | 490 | 707 | 598 | 427 | 626 | 526 |
| Gujrat | 43 | 89 | 117 | 103 | 68 | 111 | 90 |
| Jhelum | 108 | 340 | 466 | 403 | 236 | 351 | 293 |
| Kasoor | 125 | 442 | 570 | 506 | 406 | 552 | 479 |
| Lahore | 1,304 | 3,418 | 4,455 | 3,936 | 2,253 | 3,155 | 2,704 |
| Multan | 1,662 | 2,506 | 3,754 | 3,130 | 1,735 | 2,908 | 2,322 |
| Rawalpindi | 601 | 1,250 | 1,910 | 1,580 | 591 | 1,043 | 817 |
| Sargodha | 212 | 1,077 | 1,348 | 1,213 | 605 | 754 | 679 |
| Sheikhupura | 155 | 709 | 892 | 800 | 533 | 702 | 617 |
| Sialkot | 109 | 464 | 600 | 532 | 320 | 441 | 380 |
| Hyderabad | 368 | 958 | 1,166 | 1,062 | 746 | 961 | 853 |
| Karachi | 2,805 | 7,865 | 10,381 | 9,123 | 5,850 | 8,106 | 6,978 |
| Larkana | 189 | 945 | 1,315 | 1,130 | 545 | 885 | 715 |
| Mirpur Khas | 123 | 250 | 327 | 289 | 183 | 248 | 215 |
| Nawabshah | 101 | 327 | 438 | 383 | 226 | 329 | 277 |
| Sukkhur | 382 | 1,457 | 1,761 | 1,609 | 1,027 | 1,302 | 1,164 |
| **Total** | **9,820** | **26,804** | **36,776** | **31,790** | **18,713** | **27,623** | **23,168** |

## 6.7 Estimated Number of TG sex workers

It is important to note here that although a large proportion of TGs are involved in sex work, NOT ALL TGs in Pakistan sell sex. is involved in Sex work. A little more than 80% of all TGs in Pakistan were reported to sell sex, while in some of the cities mapped almost all TGs are involved in sex work. TGs who are not involved in sex work usually live in their houses with families do not look for sexual partners. They might have sexual partners, but the partnerships are long term and mostly monogamous. Table 6.6 presents the proportion of TGs that sell sex for money in each city. In the 23 cities mapped, 14 cities reported more than 80% of TGs involved in sex work. Among these cities, all of the TGs in Peshawar (100%), Larkana (99.7%), Bahawalpur (99.4%) and Turbat (99.2%) reported involvement in sex work. The lowest proportions were reported for Sialkot (45.1%), Gujranwala (50.1%) and Sheikhupura (52.8%).

Table 6.6 : Proportion of TGS in each city who sell sex for money

| City | Min % | Max % | Avg. % |
|---|---|---|---|
| Quetta | 97.3 | 97.8 | 97.5 |
| Turbat | 99.1 | 99.2 | 99.2 |
| Bannu | 81.0 | 84.0 | 82.5 |
| Peshawar | 100.0 | 100.0 | 100.0 |
| Bahawalpur | 98.5 | 100.3 | 99.4 |
| DG Khan | 58.5 | 64.4 | 61.5 |
| Faisalabad | 72.6 | 81.2 | 76.9 |
| Gujranwala | 47.2 | 52.9 | 50.1 |
| Gujrat | 96.9 | 98.6 | 97.7 |
| Jhelum | 64.4 | 74.1 | 69.2 |
| Kasoor | 94.4 | 94.6 | 94.5 |
| Lahore | 82.6 | 84.1 | 83.3 |
| Multan | 74.3 | 92.1 | 83.2 |
| Rawalpindi | 74.6 | 75.1 | 74.8 |
| Sargodha | 98.7 | 98.8 | 98.8 |
| Sheikhupura | 49.3 | 56.3 | 52.8 |
| Sialkot | 40.3 | 49.9 | 45.1 |

| | | | |
|---|---|---|---|
| Hyderabad | 82.1 | 83.2 | 82.7 |
| Karachi | 78.5 | 82.2 | 80.4 |
| Larkana | 99.4 | 100 | 99.7 |
| Mirpur Khas | 55.2 | 59.9 | 57.6 |
| Nawabshah | 64.7 | 77.2 | 71.0 |
| Sukkhur | 75.5 | 80.3 | 77.9 |
| **TOTAL** | **77.7** | **83.1** | **80.4** |

# 7. MEN HAVING SEX WITH MEN (MSM)

The definition utilized for men who have sex with men derived from "Operational Guidelines for Monitoring and Evaluation of HIV Programs for Sex Workers, Men who Have Sex with Men and Transgender People: UNDP Report on the Multi-City initiative, December 2010" which details men who have sex with men as "any male who has sex with other men as a matter of preference or practice, regardless of their sexual identity or sexual orientation, and irrespective of whether or not they also have sex with women". The proposed definition focuses on 'high-risk' as hotspots or locations (including virtually) where MSM find casual—including paid and anonymous—sexual partners.

For the purpose of this study we focused on the high risk MSM, i.e., MSM who congregate at 'high-risk' hotspots/locations or use internet or mobile applications to find casual—including paid and anonymous—sexual partners. We might have missed those men who might have had sex with other men as part of sexual experimentation, are limited to a regular same-sex partner, or very occasionally involved in male-to-male sex. There were a few of typologies of MSM determined through this study based on the type of spots that they congregate and associate with other men.

Two parallel approaches were used for estimating the total number of MSM in Pakistan: Geographical and virtual mapping. Geographic mapping (Geo-mapping) approach used was similar to the geographical approach used for other Key populations. The formative research conducted prior to mapping (Focus Group Discussions and in-depth interviews conducted with representatives of MSM community populations and key stakeholders) also highlighted a large proportion of MSM that operate and find sexual partners through the internet and virtual sites. Therefore, information pertaining to these websites was collected and estimates were calculated based on the number of MSMs operating through these websites.

## 7A – GEOGRAPHIC MAPPING OF MSM

Geographic mapping (Geo-mapping) approach used was similar to the geographical approach used for other Key populations such as FSWs, TGs and PWIDS. MSMs that congregated at a physical venue were mapped.

## 7A.1 Estimated Number of MSM at Geo-spots

In all cities mapped, this study was able to identify a total number of 8,606 geographical spots where MSM congregated. We estimated an average number of 46,264 (ranging between 39,273 and 53,257). Based on these numbers the average number of MSM congregating at each spot was calculated to be 4.5.

Table 7.1 Estimated number of MSM operating through geo-spots in Pakistan, 2016

| City | No of spots | Min estimate | Max Estimate | Avg Estimate |
|---|---|---|---|---|
| Bahawalpur | 455 | 1,973 | 2,785 | 2,379 |
| Bannu | 113 | 432 | 556 | 494 |
| DG Khan | 100 | 258 | 438 | 348 |
| Faisalabad | 497 | 1,480 | 2,552 | 2,016 |
| Gujranwala | 63 | 260 | 389 | 325 |
| Gujrat | 13 | 92 | 130 | 111 |
| Hyderabad | 172 | 1,565 | 1,994 | 1,779 |
| Karachi | 3,495 | 15,812 | 20,910 | 18,361 |
| Kasoor | 147 | 519 | 707 | 613 |
| Lahore | 834 | 4,696 | 6,246 | 5,471 |
| Larkana | 236 | 1,369 | 1,855 | 1,612 |
| Mirpur Khas | 36 | 273 | 327 | 300 |
| Multan | 841 | 3,475 | 5,055 | 4,265 |
| Nawabshah | 98 | 620 | 803 | 712 |
| Peshawar | 126 | 319 | 459 | 389 |
| Quetta | 243 | 1,343 | 1,698 | 1,521 |
| Rawalpindi | 404 | 1,090 | 1,648 | 1,369 |
| Sargodha | 371 | 1,721 | 2,188 | 1,954 |
| Sheikhupura | 72 | 581 | 756 | 668 |
| Sialkot | 46 | 179 | 236 | 207 |
| Sukkhur | 212 | 936 | 1,205 | 1,070 |
| Turbat | 32 | 280 | 320 | 300 |
| **Total** | **8,606** | **39,273** | **53,257** | **46,264** |

## 7A.2 Number of MSM at Geo-spots in cities mapped

Karachi reported the largest spot sizes and MSM estimates among the 23 cities mapped with an average number of 18,361 MSM mapped at 3,495 spots. Estimates of MSM from Karachi made up approximately 35% of the total estimates calculated. The second largest MSM estimates were identified for Lahore (average of 5,471) followed by Multan (average of 4,265). It is interesting also to note that cities such as Gujrat, Mir Pur Khas and Turbat, have the smallest reported numbers of spots and average estimates of MSMs. The smaller estimated numbers of MSM in these cities can be due to reduced visibility owing to the overall stigma and discrimination experienced by this key population. This is important information, which should be utilized by the prevention programs as larger number of MSMs operate through hidden networks and have concealed activities, and targeted intervention for this specific community will need a fairly different approach as compared to prevention approaches for MSM who operate through geo-spots. (See table 7.1)

## 7A.3 Estimated Number of MSM by zones within cities

As seen in other groups, numbers within each city show wide variations between zones which should be used by provincial programs to target HIV prevention services. Having an understanding of the distribution of any key population in a geographical setting is important as it helps service planners to plan where services need to be focused and placed. The estimated numbers of MSM in each zone in all cities mapped are provided in Table 7.2, while the proceeding section provides distribution maps of MSM operating through geo-locations in these cities.

Table 7.2 Estimated number of MSM operating through geo-spots in Pakistan, 2016

| City | Zone | Min | Max |
|---|---|---|---|
| Bahawalpur | 1 | 300 | 409 |
| | 2 | 134 | 226 |
| | 3 | 91 | 156 |
| | 4 | 157 | 226 |
| | 5 | 98 | 151 |
| | 6 | 144 | 200 |
| | 7 | 39 | 68 |
| | 8 | 134 | 152 |
| | 9 | 109 | 140 |

| City | Zone | Min | Max |
|---|---|---|---|
| Faisalabad | 1 | 77 | 133 |
| | 2 | 23 | 41 |
| | 3 | 47 | 93 |
| | 4 | 44 | 76 |
| | 5 | 75 | 134 |
| | 6 | 35 | 67 |
| | 7 | 66 | 122 |
| | 8 | 73 | 156 |
| | 9 | 54 | 99 |

| | | | |
|---|---|---|---|
| | 10 | 164 | 226 |
| | 11 | 110 | 150 |
| | 12 | 164 | 217 |
| Bannu | 1 | 72 | 89 |
| | 2 | 133 | 170 |
| | 3 | 49 | 62 |
| | 4 | 49 | 63 |
| | 5 | 60 | 82 |
| | 6 | 47 | 62 |
| DG Khan | 1 | 39 | 92 |
| | 2 | 20 | 34 |
| | 3 | 36 | 56 |
| | 4 | 25 | 37 |
| | 5 | 19 | 27 |
| | 6 | 21 | 31 |
| | 7 | 18 | 26 |
| | 8 | 14 | 27 |
| | 9 | 11 | 21 |
| | 10 | 41 | 64 |
| Gujranwala | 1 | 18 | 25 |
| | 2 | 17 | 24 |
| | 3 | 12 | 16 |
| | 4 | 33 | 46 |
| | 5 | 4 | 6 |
| | 6 | 10 | 16 |
| | 7 | 5 | 8 |
| | 8 | 7 | 9 |
| | 11 | 6 | 9 |
| | 12 | 4 | 6 |
| | 13 | 11 | 17 |
| | 14 | 32 | 48 |
| | 15 | 22 | 34 |
| | 16 | 4 | 13 |
| Gujrat | 1 | 3 | 4 |

| | | | |
|---|---|---|---|
| | 10 | 54 | 92 |
| | 11 | 61 | 100 |
| | 12 | 52 | 85 |
| | 13 | 32 | 55 |
| | 14 | 32 | 59 |
| | 15 | 39 | 66 |
| | 16 | 31 | 49 |
| | 17 | 58 | 91 |
| | 18 | 19 | 29 |
| | 19 | 55 | 91 |
| | 20 | 33 | 46 |
| | 21 | 37 | 67 |
| | 22 | 23 | 39 |
| | 23 | 57 | 89 |
| | 24 | 22 | 35 |
| | 25 | 65 | 101 |
| | 26 | 9 | 16 |
| | 27 | 46 | 76 |
| | 28 | 14 | 20 |
| Larkana | 1 | 126 | 157 |
| | 2 | 56 | 72 |
| | 3 | 27 | 35 |
| | 4 | 59 | 89 |
| | 5 | 215 | 345 |
| | 6 | 93 | 120 |
| | 7 | 123 | 178 |
| | 8 | 122 | 157 |
| | 9 | 158 | 219 |
| | 10 | 366 | 450 |
| Mir Pur Khas | 1 | 17 | 20 |
| | 2 | 50 | 59 |
| | 3 | 34 | 41 |
| | 4 | 16 | 20 |
| | 5 | 83 | 95 |

| | | | |
|---|---|---|---|
| | 2 | 10 | 14 |
| | 4 | 8 | 11 |
| | 5 | 22 | 32 |
| | 6 | 3 | 4 |
| Hyderabad | 1 | 162 | 198 |
| | 2 | 79 | 107 |
| | 3 | 45 | 57 |
| | 4 | 50 | 62 |
| | 5 | 221 | 265 |
| | 6 | 137 | 171 |
| | 7 | 152 | 193 |
| | 8 | 103 | 129 |
| | 9 | 81 | 104 |
| | 10 | 89 | 111 |
| | 11 | 23 | 28 |
| | 12 | 89 | 121 |
| | 13 | 12 | 18 |
| | 14 | 29 | 41 |
| | 15 | 72 | 92 |
| | 16 | 37 | 53 |
| | 17 | 39 | 52 |
| | 18 | 39 | 57 |
| | 25 | 11 | 14 |
| Karachi | 1 | 482 | 630 |
| | 2 | 776 | 1038 |
| | 3 | 344 | 470 |
| | 4 | 240 | 320 |
| | 5 | 277 | 361 |
| | 6 | 335 | 445 |
| | 7 | 193 | 279 |
| | 8 | 345 | 477 |
| | 9 | 675 | 856 |
| | 10 | 311 | 410 |
| | 11 | 213 | 294 |

| | | | |
|---|---|---|---|
| | 6 | 2 | 3 |
| | 7 | 36 | 47 |
| | 9 | 14 | 16 |
| | 10 | 2 | 3 |
| Multan | 1 | 92 | 134 |
| | 2 | 67 | 98 |
| | 3 | 83 | 122 |
| | 4 | 60 | 94 |
| | 5 | 85 | 124 |
| | 6 | 154 | 238 |
| | 7 | 161 | 251 |
| | 8 | 41 | 57 |
| | 9 | 96 | 133 |
| | 10 | 254 | 369 |
| | 11 | 124 | 192 |
| | 12 | 142 | 197 |
| | 13 | 90 | 132 |
| | 14 | 96 | 134 |
| | 15 | 98 | 142 |
| | 16 | 104 | 149 |
| | 17 | 169 | 238 |
| | 19 | 31 | 54 |
| | 20 | 278 | 421 |
| | 21 | 23 | 31 |
| | 22 | 427 | 584 |
| | 23 | 74 | 103 |
| | 24 | 19 | 29 |
| Nawabshah | 1 | 119 | 149 |
| | 2 | 80 | 103 |
| | 3 | 29 | 40 |
| | 4 | 73 | 95 |
| | 5 | 59 | 78 |
| | 6 | 58 | 74 |
| | 7 | 63 | 83 |

| | | | |
|---|---|---|---|
| | 12 | 241 | 365 |
| | 13 | 723 | 936 |
| | 14 | 327 | 431 |
| | 15 | 41 | 55 |
| | 16 | 280 | 380 |
| | 17 | 449 | 608 |
| | 18 | 347 | 423 |
| | 19 | 28 | 43 |
| | 20 | 13 | 18 |
| | 21 | 418 | 519 |
| | 22 | 285 | 366 |
| | 23 | 63 | 98 |
| | 24 | 314 | 384 |
| | 25 | 14 | 21 |
| | 26 | 422 | 510 |
| | 27 | 289 | 393 |
| | 28 | 354 | 542 |
| | 29 | 170 | 228 |
| | 30 | 304 | 417 |
| | 31 | 301 | 410 |
| | 32 | 213 | 296 |
| | 33 | 243 | 343 |
| | 34 | 340 | 481 |
| | 35 | 131 | 175 |
| | 36 | 135 | 182 |
| | 37 | 176 | 249 |
| | 38 | 374 | 476 |
| | 39 | 267 | 349 |
| | 40 | 129 | 171 |
| | 41 | 240 | 327 |
| | 42 | 588 | 723 |
| | 43 | 471 | 571 |
| | 44 | 232 | 305 |
| | 45 | 252 | 349 |

| | | | |
|---|---|---|---|
| | 8 | 36 | 48 |
| Peshawar | 1 | 46 | 66 |
| | 2 | 8 | 15 |
| | 3 | 5 | 6 |
| | 4 | 9 | 12 |
| | 5 | 51 | 76 |
| | 6 | 24 | 36 |
| | 7 | 4 | 6 |
| | 8 | 6 | 9 |
| | 9 | 7 | 11 |
| | 10 | 9 | 15 |
| | 11 | 2 | 4 |
| | 12 | 8 | 11 |
| | 13 | 4 | 8 |
| | 14 | 6 | 9 |
| | 15 | 8 | 14 |
| | 16 | 21 | 30 |
| | 17 | 30 | 38 |
| | 18 | 3 | 4 |
| | 19 | 27 | 35 |
| | 20 | 28 | 36 |
| Quetta | 1 | 113 | 134 |
| | 2 | 65 | 86 |
| | 3 | 53 | 66 |
| | 4 | 53 | 70 |
| | 5 | 38 | 48 |
| | 6 | 72 | 96 |
| | 7 | 118 | 144 |
| | 8 | 95 | 123 |
| | 9 | 46 | 58 |
| | 10 | 134 | 169 |
| | 12 | 75 | 93 |
| | 13 | 69 | 93 |
| | 14 | 116 | 148 |

| | | | |
|---|---|---|---|
| | 46 | 181 | 254 |
| | 47 | 463 | 590 |
| | 48 | 449 | 584 |
| | 49 | 479 | 606 |
| | 50 | 102 | 135 |
| | 51 | 109 | 143 |
| | 52 | 664 | 874 |
| Kasoor | 1 | 106 | 158 |
| | 2 | 66 | 94 |
| | 3 | 128 | 164 |
| | 4 | 19 | 23 |
| | 5 | 176 | 227 |
| | 6 | 15 | 29 |
| Lahore | 1 | 298 | 355 |
| | 2 | 125 | 158 |
| | 3 | 67 | 87 |
| | 4 | 35 | 55 |
| | 5 | 20 | 30 |
| | 6 | 123 | 163 |
| | 7 | 195 | 269 |
| | 8 | 109 | 159 |
| | 9 | 60 | 79 |
| | 10 | 147 | 215 |
| | 11 | 100 | 139 |
| | 12 | 112 | 147 |
| | 13 | 119 | 167 |
| | 15 | 62 | 81 |
| | 16 | 43 | 56 |
| | 18 | 3 | 4 |
| | 19 | 15 | 27 |
| | 20 | 55 | 84 |
| | 21 | 68 | 87 |
| | 22 | 209 | 269 |
| | 23 | 72 | 93 |

| | | | |
|---|---|---|---|
| | 15 | 161 | 193 |
| | 16 | 50 | 63 |
| Rawalpindi | 1 | 85 | 121 |
| | 2 | 60 | 80 |
| | 3 | 86 | 116 |
| | 4 | 68 | 97 |
| | 5 | 32 | 51 |
| | 6 | 85 | 126 |
| | 7 | 100 | 167 |
| | 8 | 34 | 58 |
| | 9 | 15 | 33 |
| | 10 | 13 | 21 |
| | 11 | 79 | 115 |
| | 12 | 36 | 61 |
| | 13 | 78 | 117 |
| | 14 | 64 | 103 |
| | 15 | 9 | 13 |
| | 16 | 64 | 94 |
| Sargodha | 1 | 119 | 152 |
| | 2 | 128 | 167 |
| | 3 | 138 | 168 |
| | 4 | 310 | 407 |
| | 5 | 94 | 118 |
| | 6 | 162 | 222 |
| | 7 | 155 | 188 |
| | 8 | 153 | 182 |
| | 9 | 61 | 74 |
| | 10 | 114 | 145 |
| Sheikhupura | 1 | 23 | 31 |
| | 2 | 24 | 31 |
| | 3 | 8 | 11 |
| | 4 | 23 | 30 |
| | 5 | 92 | 123 |
| | 6 | 120 | 150 |

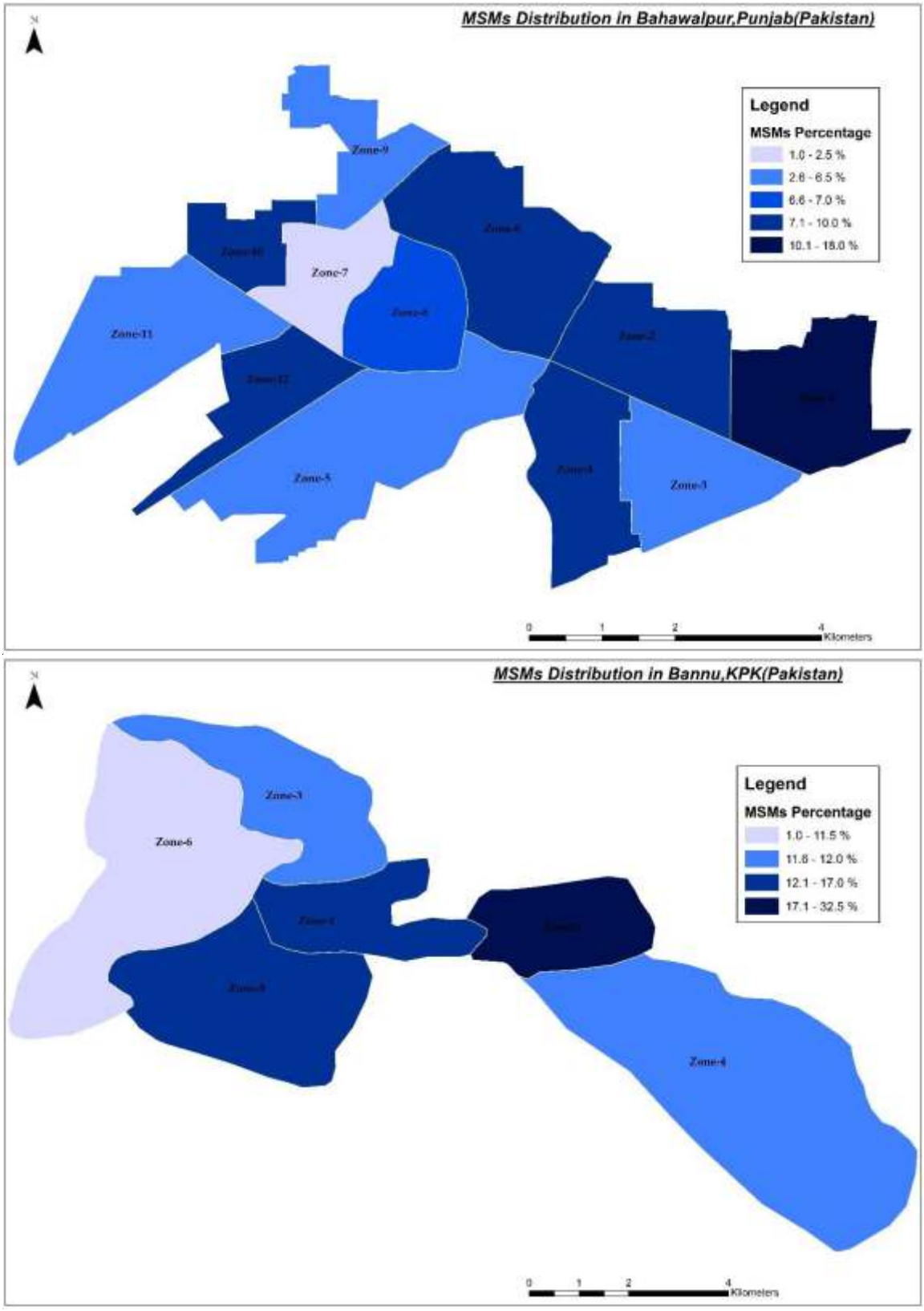
| | | | |
|---|---|---|---|
| | 24 | 82 | 110 |
| | 25 | 23 | 33 |
| | 26 | 300 | 352 |
| | 27 | 58 | 78 |
| | 28 | 26 | 31 |
| | 29 | 18 | 25 |
| | 30 | 75 | 107 |
| | 31 | 9 | 13 |
| | 32 | 43 | 62 |
| | 33 | 25 | 36 |
| | 34 | 9 | 14 |
| | 35 | 112 | 155 |
| | 36 | 27 | 39 |
| | 37 | 8 | 12 |
| | 38 | 4 | 7 |
| | 39 | 3 | 5 |
| Turbat | 1 | 77 | 89 |
| | 2 | 56 | 65 |
| | 3 | 35 | 41 |
| | 4 | 69 | 76 |
| | | | |
| | | | |

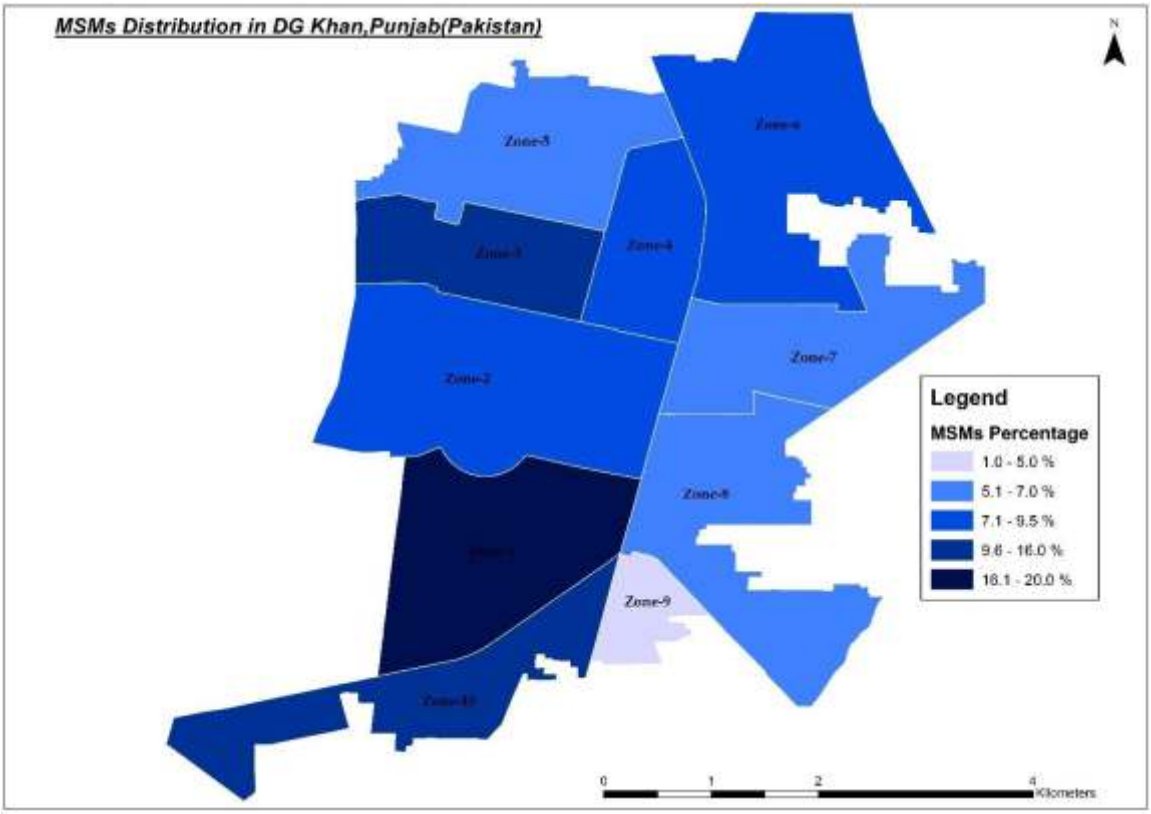
| | | | |
|---|---|---|---|
| Sialkot | 1 | 18 | 24 |
| | 2 | 16 | 19 |
| | 3 | 19 | 25 |
| | 4 | 13 | 17 |
| | 5 | 13 | 17 |
| | 6 | 23 | 31 |
| | 7 | 9 | 12 |
| | 8 | 12 | 15 |
| | 9 | 16 | 21 |
| | 10 | 29 | 40 |
| Sukkhur | 1 | 94 | 119 |
| | 2 | 46 | 62 |
| | 3 | 62 | 85 |
| | 4 | 48 | 68 |
| | 5 | 19 | 27 |
| | 6 | 39 | 49 |
| | 7 | 27 | 32 |
| | 8 | 33 | 43 |
| | 9 | 31 | 40 |
| | 10 | 32 | 42 |
| | 11 | 45 | 58 |
| | 12 | 43 | 53 |

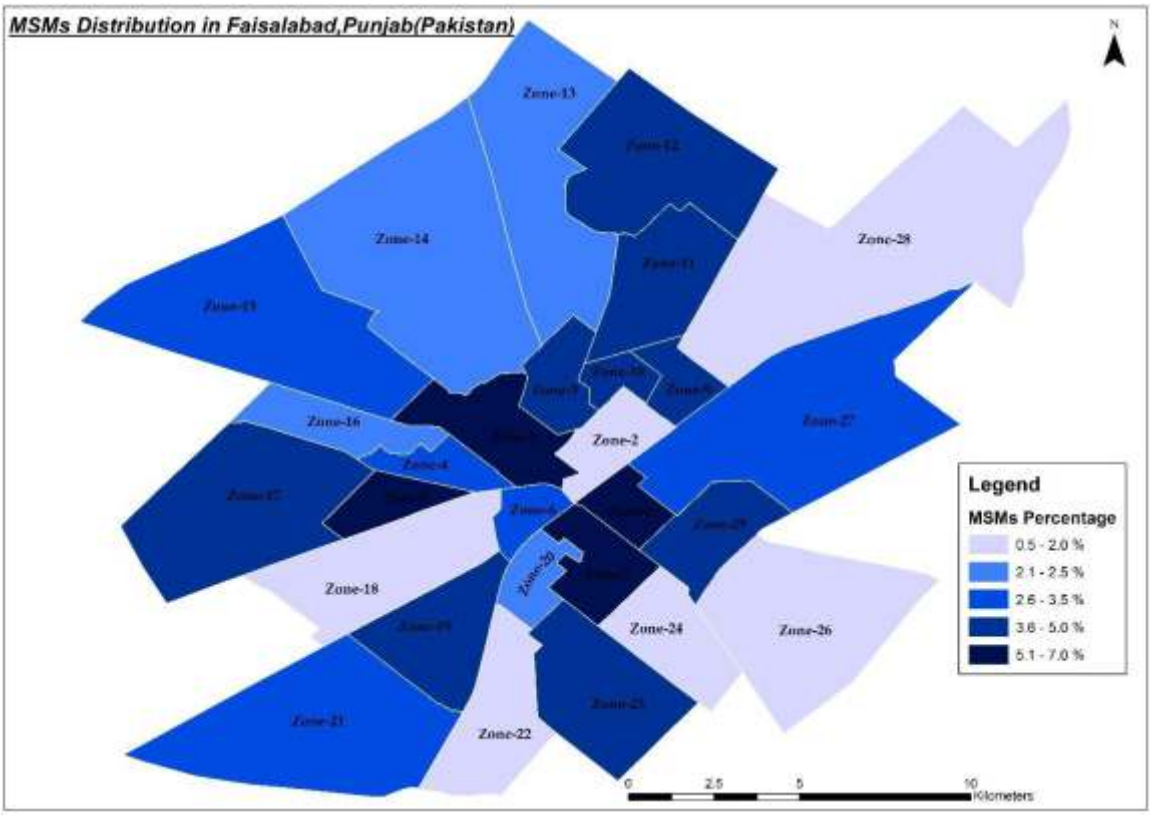
## 7A.3 Zone wise distribution of MSM within cities

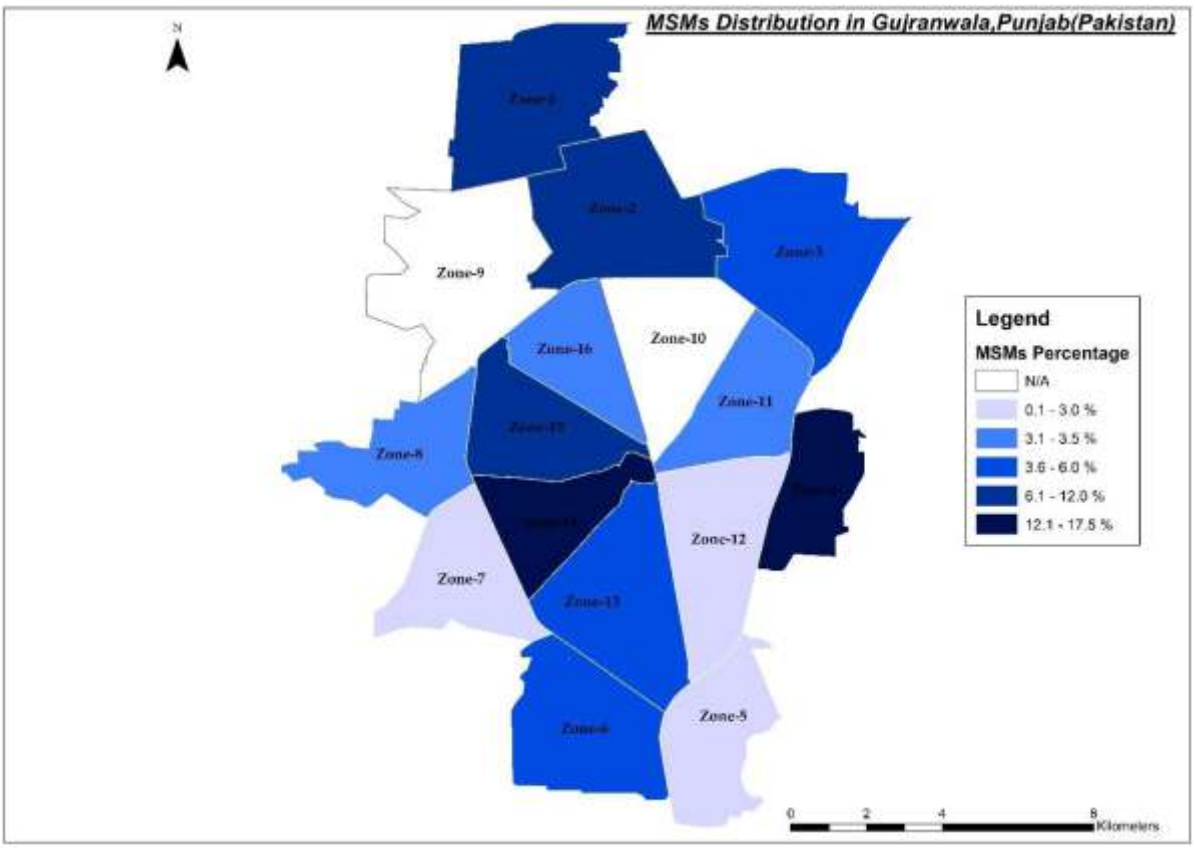
Zone wise distribution of MSMs in the 23 cities mapped are shown in the distribution maps. As seen in the previous maps, darker zones represent higher number of MSM who congregate at geo-spots, while lighter zones represent smaller concentrations of MSM at geographical spots.

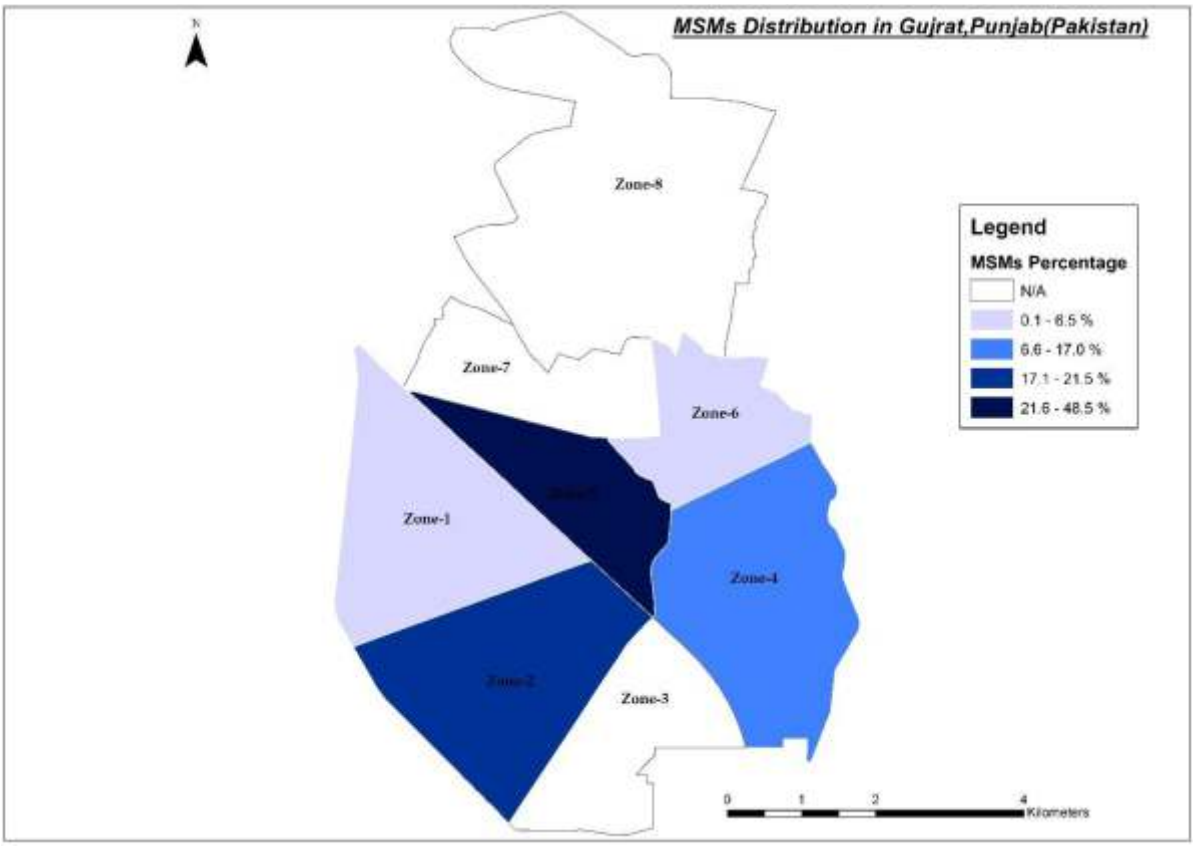
Fig 7.1 Zone wise distribution of MSM operating through geo-spots in Pakistan, 2016

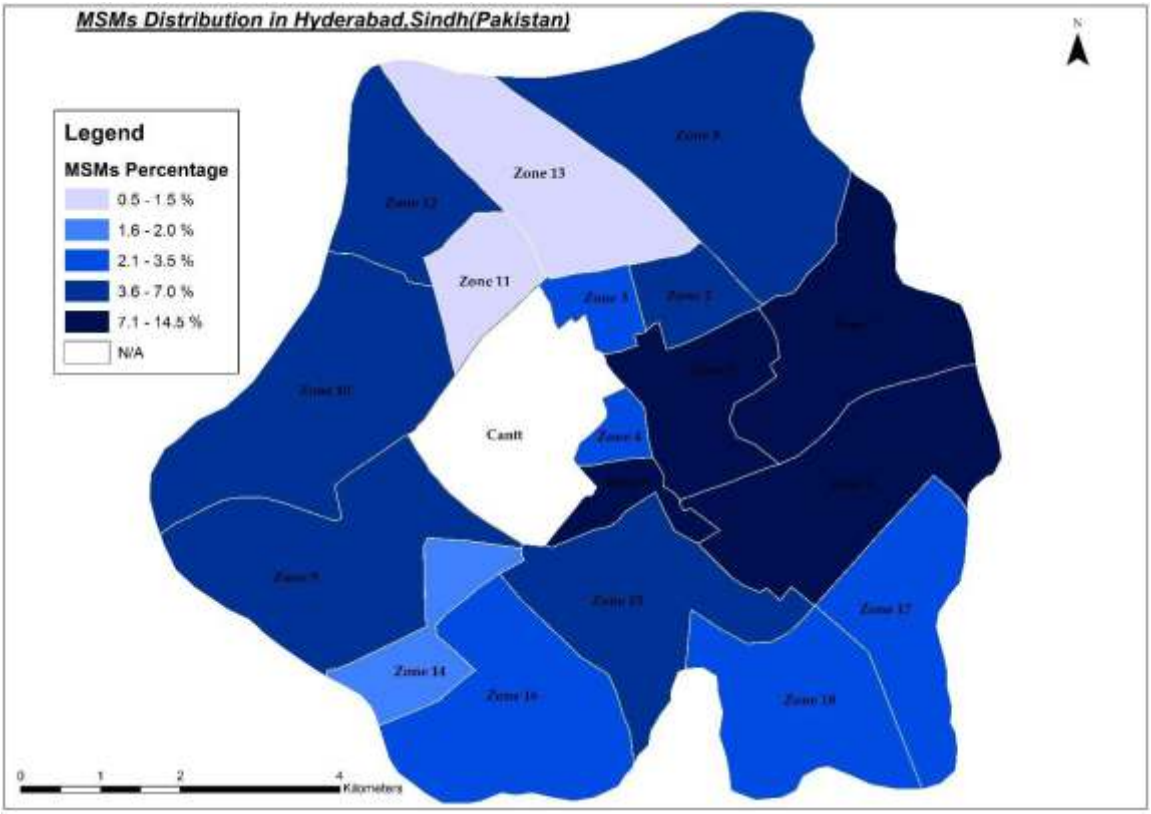


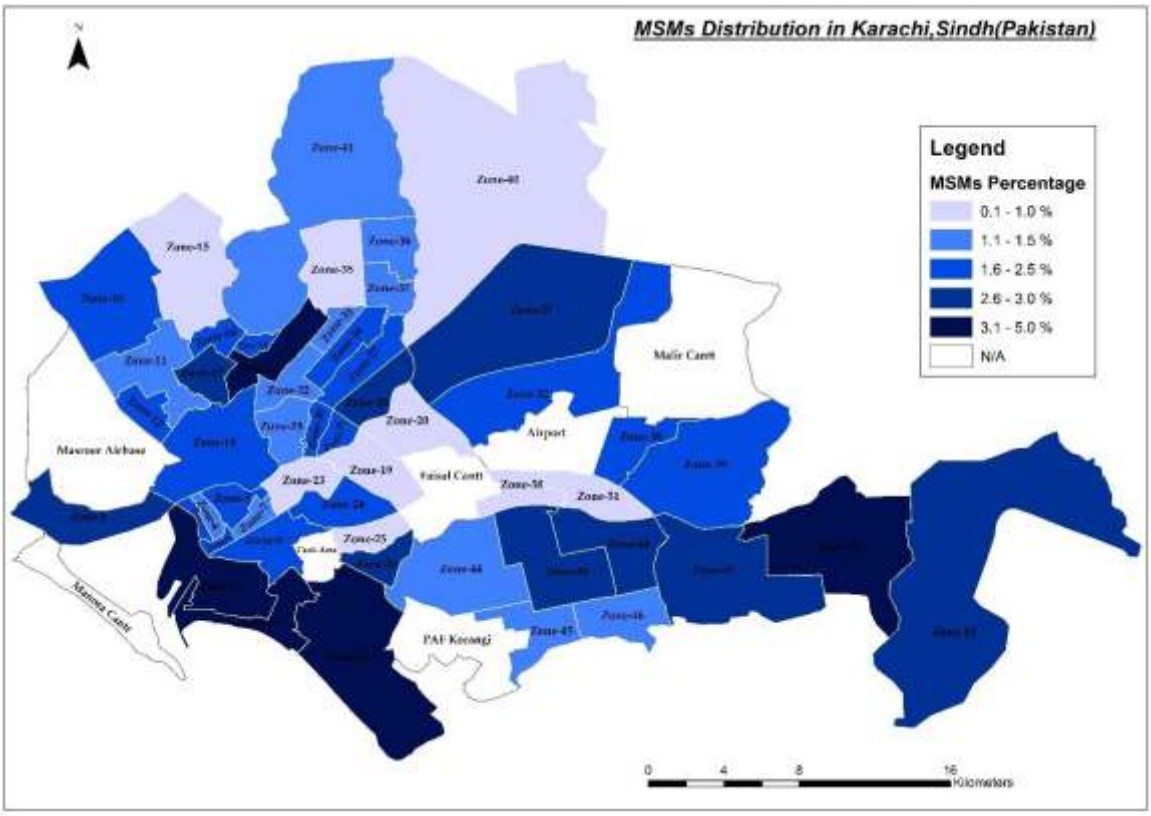

MSMs Distribution in DG Khan,Punjab(Pakistan)
N
Zone-5
Zone-6
Zone-1
Zone-4
Zone-7
Zone-3
Zone-8
Zone-9
Zone-10
Legend
MSMs Percentage
1.0 - 5.0 %
5.1 - 7.0 %
7.1 - 9.5 %
9.6 - 16.0 %
16.1 - 20.0 %
0
1
2
4
Kilometers

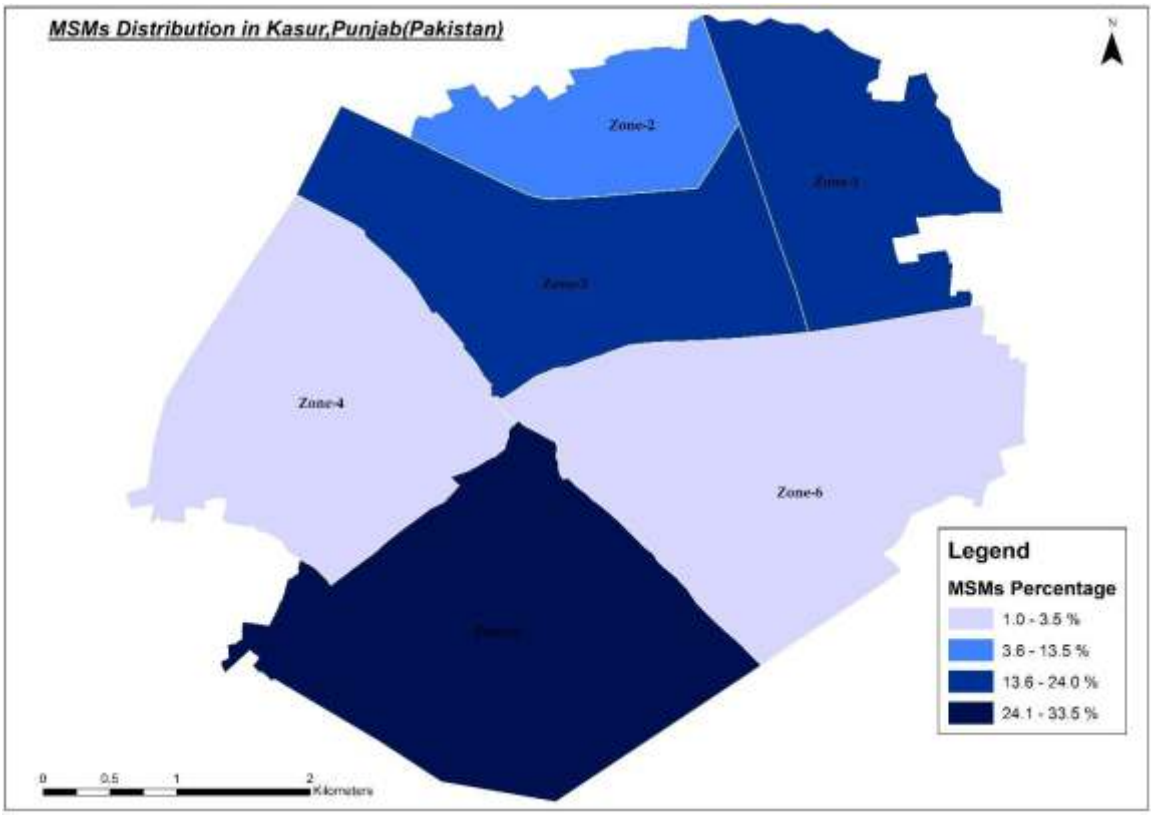

MSMs Distribution in Faisalabad,Punjab(Pakistan)
N
Zone-13
Zone-12
Zone-14
Zone-28
Zone-11
Zone-15
Zone-16
Zone-2
Zone-4
Zone-27
Zone-17
Zone-18
Zone-24
Zone-26
Zone-21
Zone-22
Zone-23
Legend
MSMs Percentage
0.5 - 2.0 %
2.1 - 2.5 %
2.6 - 3.5 %
3.6 - 5.0 %
5.1 - 7.0 %
0
2.5
5
10
Kilometers

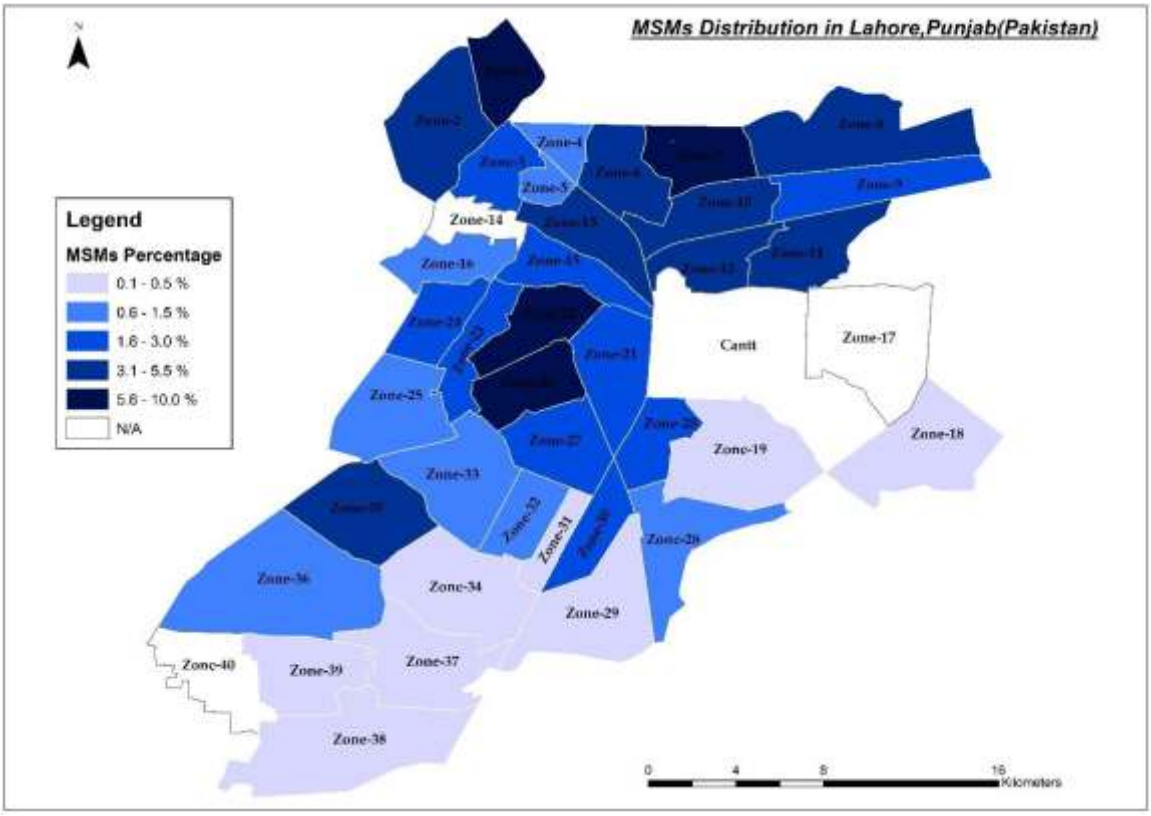

MSMs Distribution in Gujranwala,Punjab(Pakistan)
N
Zone-9
Zone-10
Zone-16
Zone-11
Zone-8
Zone-12
Zone-7
Zone-13
Zone-5
Legend
MSMs Percentage
N/A
0.1 - 3.0 %
3.1 - 3.5 %
3.6 - 6.0 %
6.1 - 12.0 %
12.1 - 17.5 %
0 2 4 8
Kilometers

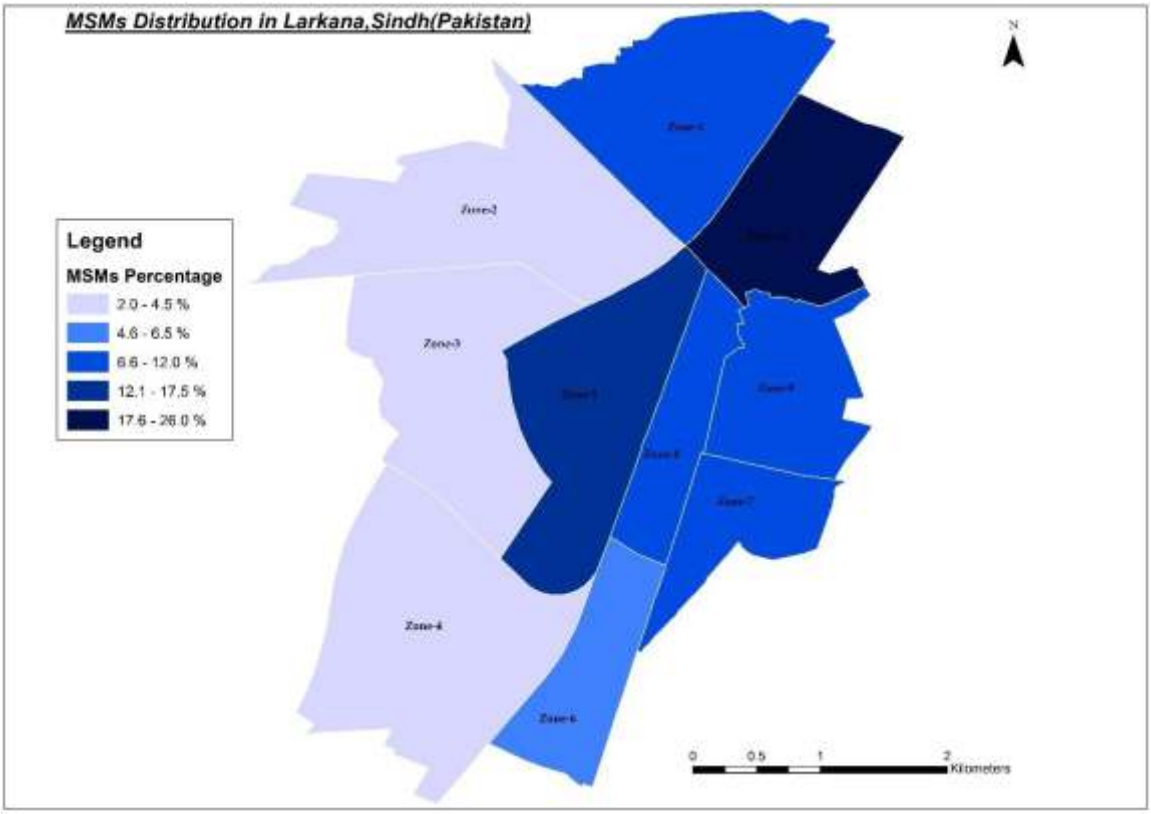

MSMs Distribution in Gujrat,Punjab(Pakistan)
N
Zone-8
Zone-7
Zone-6
Zone-1
Zone-4
Zone-3
Legend
MSMs Percentage
N/A
0.1 - 6.5 %
6.6 - 17.0 %
17.1 - 21.5 %
21.6 - 48.5 %
0 1 2 4
Kilometers

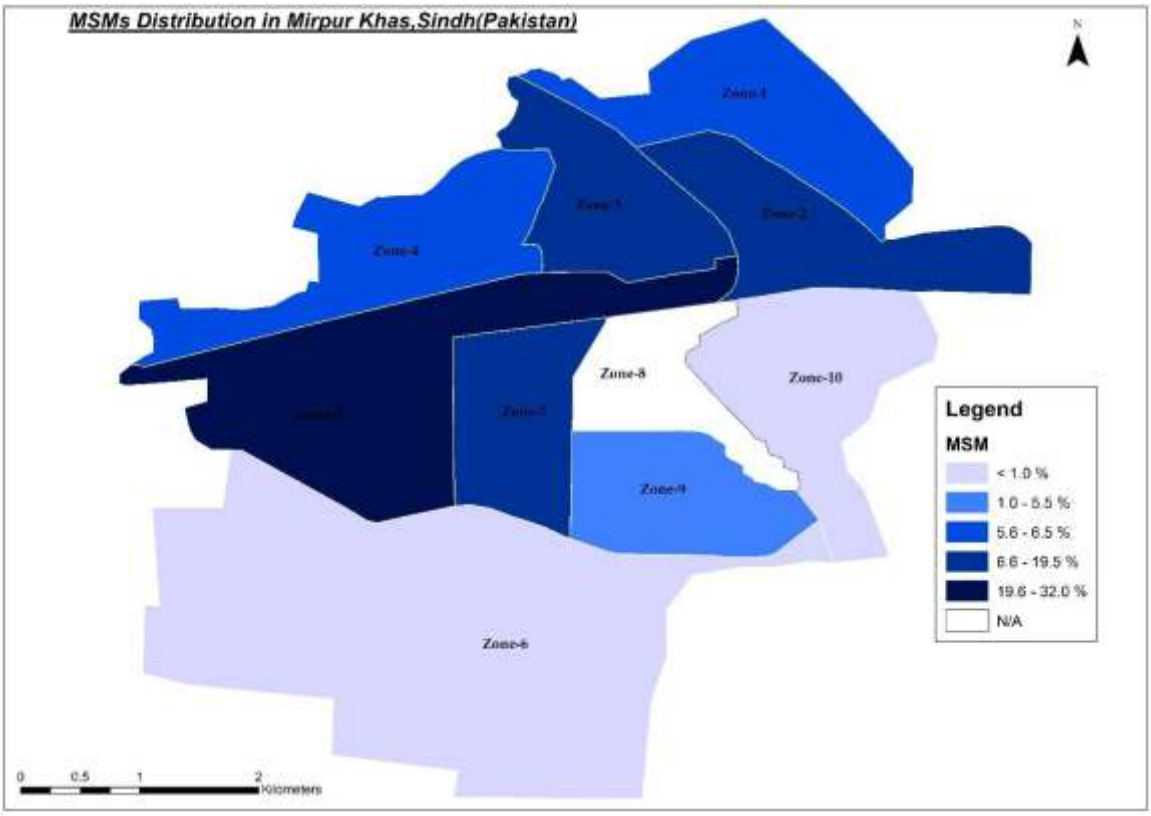

MSMs Distribution in Hyderabad,Sindh(Pakistan)
N
Legend
MSMs Percentage
0.5 - 1.5 %
1.6 - 2.0 %
2.1 - 3.5 %
3.6 - 7.0 %
7.1 - 14.5 %
N/A
Zone 13
Zone 11
Cantt
Zone 14
0
1
2
4
Kilometers

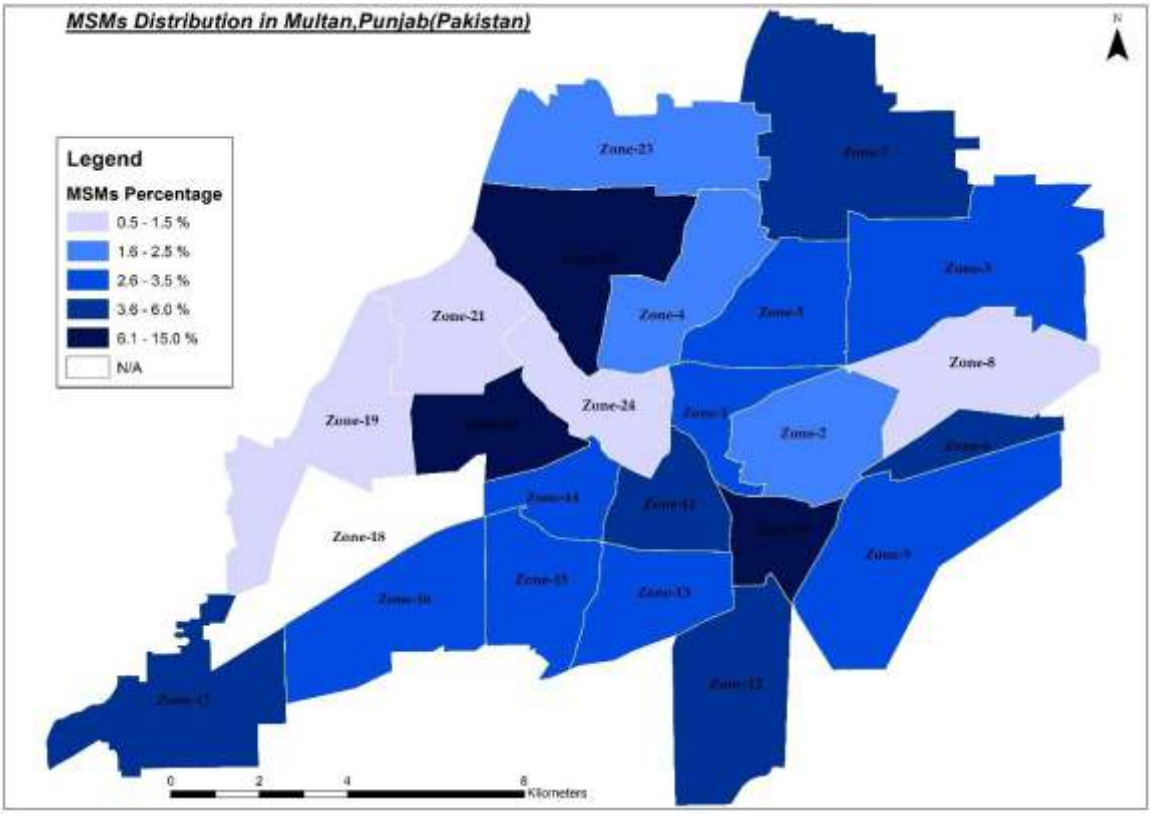

MSMs Distribution in Karachi,Sindh(Pakistan)
N
Legend
MSMs Percentage
0.1 - 1.0 %
1.1 - 1.5 %
1.6 - 2.5 %
2.6 - 3.0 %
3.1 - 5.0 %
N/A
Malir Cantt
Airport
Masroor Airbase
Faisal Cantt
PAF Korangi
Manora Cantt
0
4
8
16
Kilometers

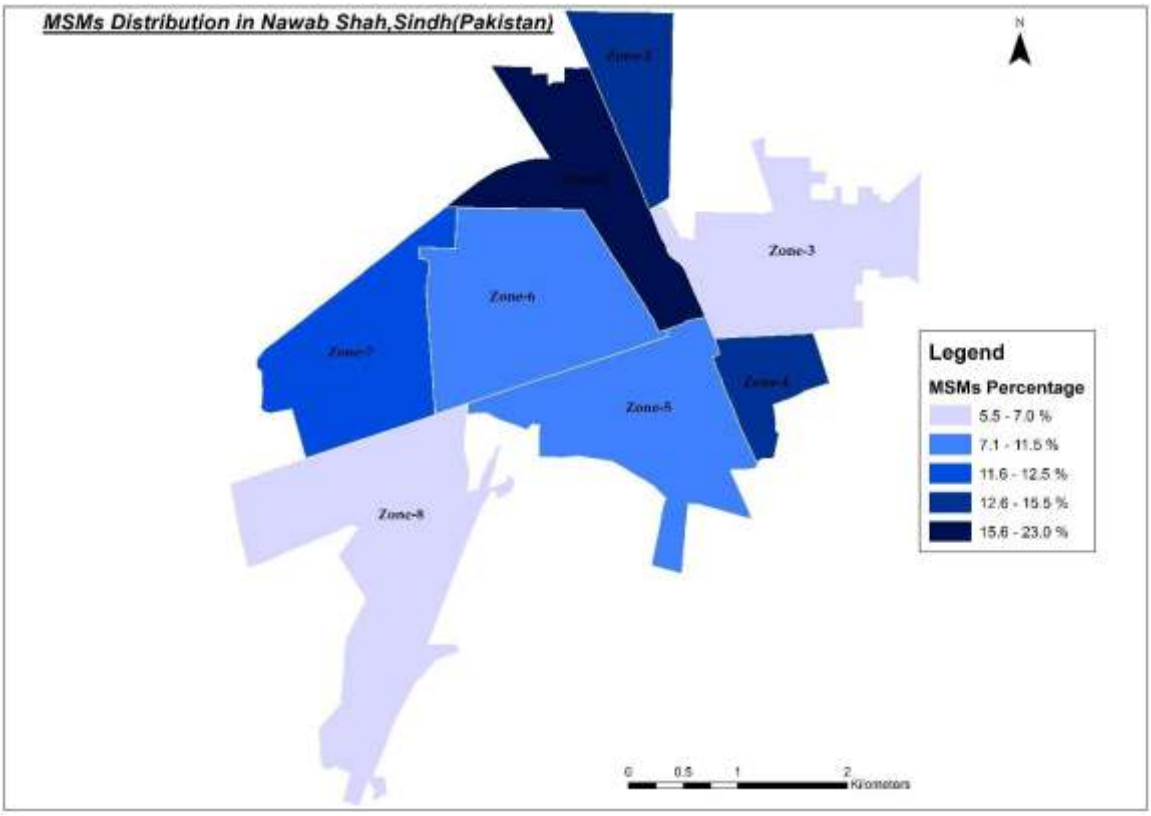

MSMs Distribution in Kasur,Punjab(Pakistan)
N
Zone-2
Zone-4
Zone-6
Legend
MSMs Percentage
1.0 - 3.5 %
3.6 - 13.5 %
13.6 - 24.0 %
24.1 - 33.5 %
0
0.5
1
2
Kilometers

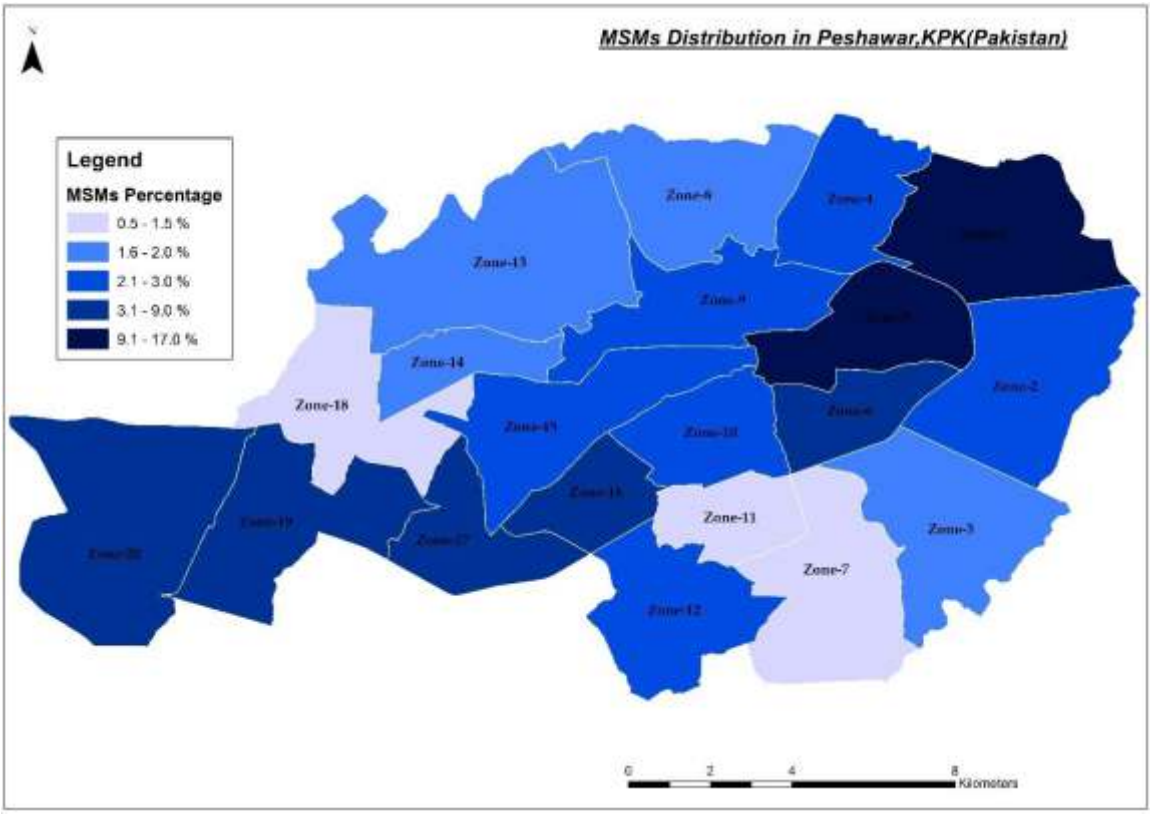

MSMs Distribution in Lahore,Punjab(Pakistan)
N
Legend
MSMs Percentage
0.1 - 0.5 %
0.6 - 1.5 %
1.6 - 3.0 %
3.1 - 5.5 %
5.6 - 10.0 %
N/A
Zone-14
Cantt
Zone-17
Zone-18
Zone-19
Zone-25
Zone-29
Zone-34
Zone-36
Zone-37
Zone-38
Zone-39
Zone-40
0
4
8
16
Kilometers

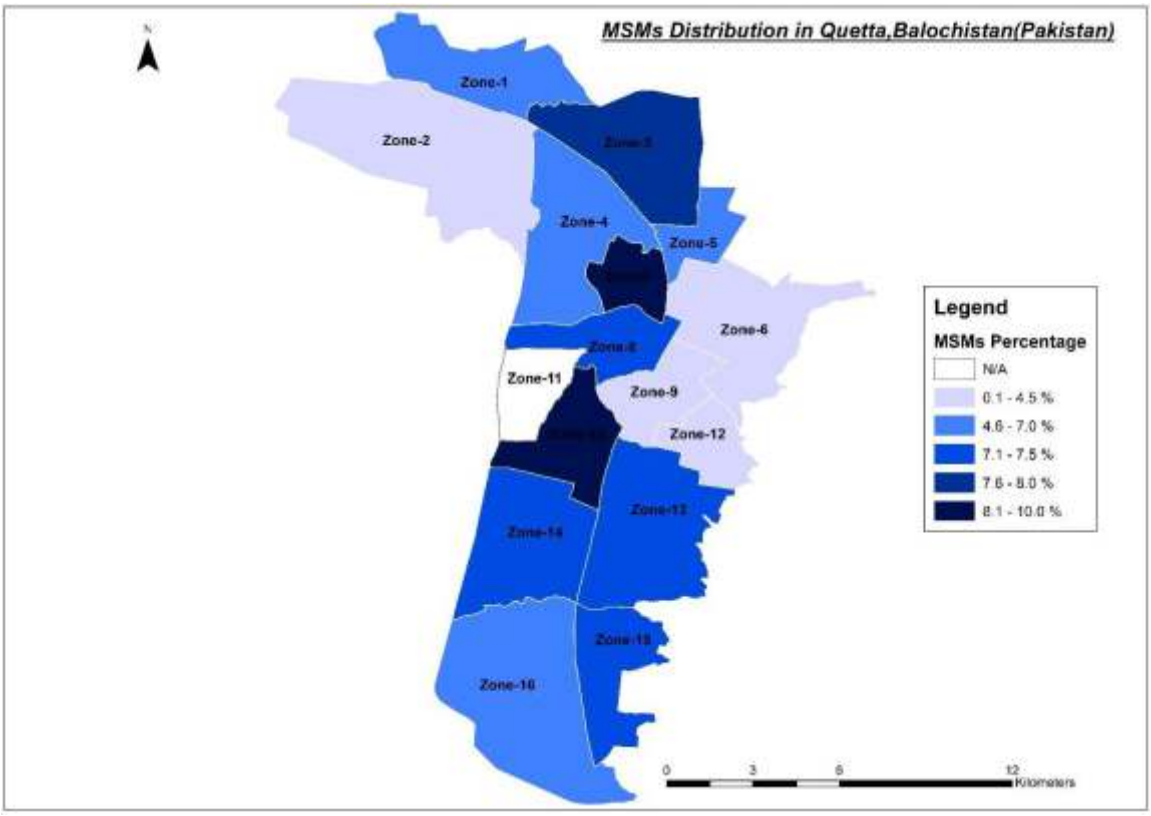

MSMs Distribution in Larkana,Sindh(Pakistan)
N
Legend
MSMs Percentage
2.0 - 4.5 %
4.6 - 6.5 %
6.6 - 12.0 %
12.1 - 17.5 %
17.6 - 26.0 %
Zone-2
Zone-3
Zone-4
0 0.5 1 2
Kilometers

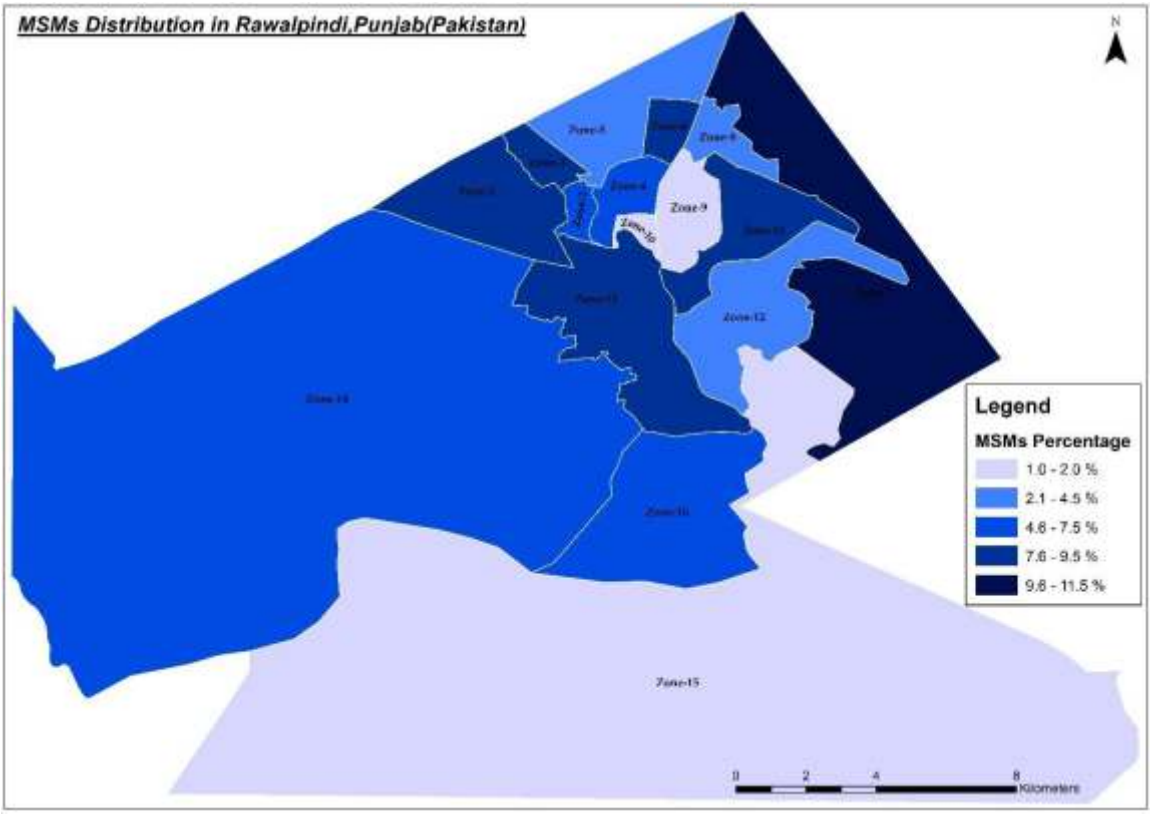

MSMs Distribution in Mirpur Khas,Sindh(Pakistan)
N
Zone-4
Zone-8
Zone-10
Zone-9
Zone-6
Legend
MSM
< 1.0 %
1.0 - 5.5 %
5.6 - 6.5 %
6.6 - 19.5 %
19.6 - 32.0 %
N/A
0 0.5 1 2
Kilometers

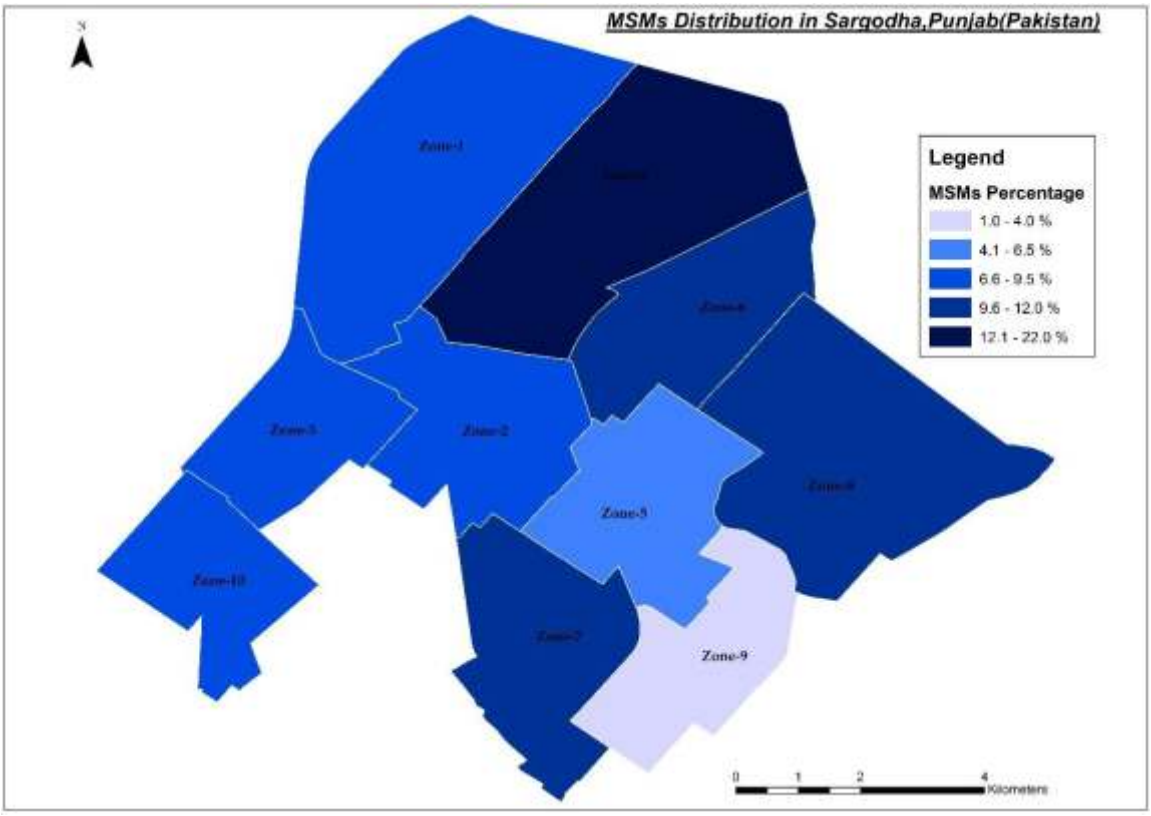

MSMs Distribution in Multan,Punjab(Pakistan)
N
Legend
MSMs Percentage
0.5 - 1.5 %
1.6 - 2.5 %
2.6 - 3.5 %
3.6 - 6.0 %
6.1 - 15.0 %
N/A
Zone-23
Zone-21
Zone-4
Zone-3
Zone-8
Zone-24
Zone-19
Zone-2
Zone-18
Zone-9
Zone-12
0
2
4
8
Kilometers

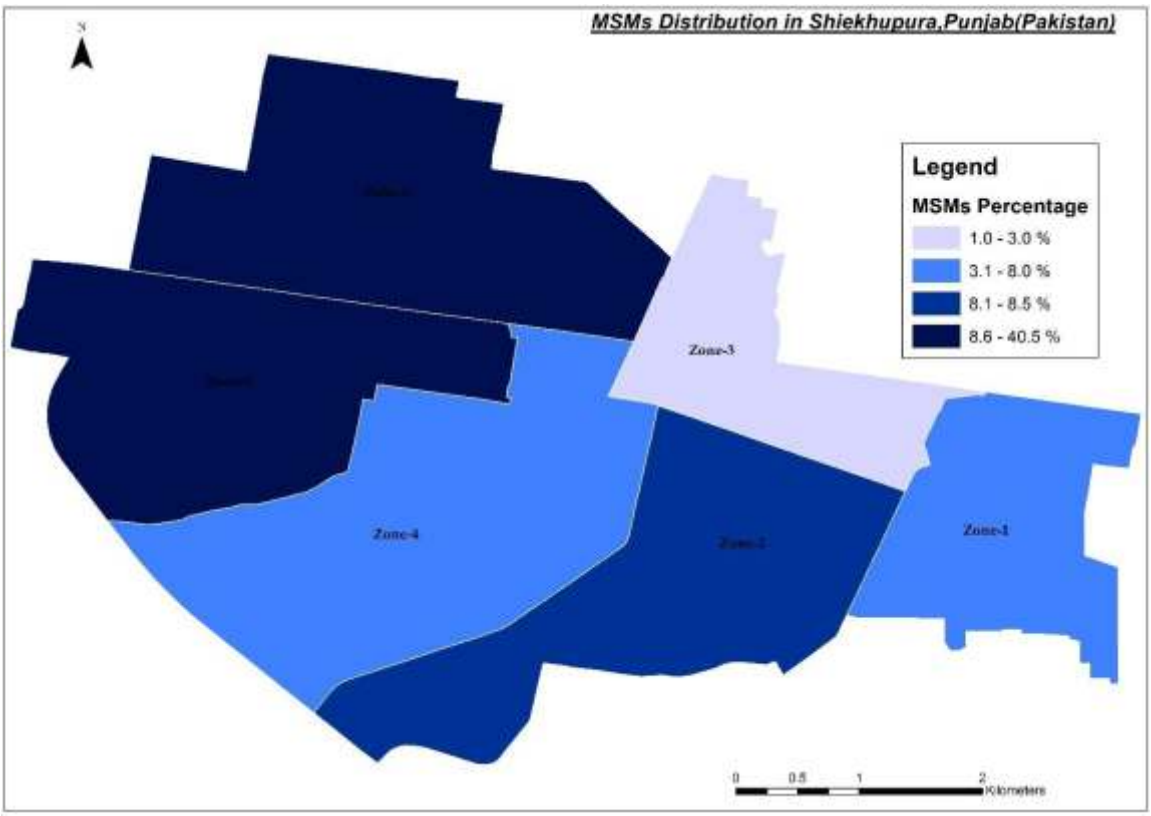

MSMs Distribution in Nawab Shah,Sindh(Pakistan)
N
Zone-3
Zone-6
Zone-5
Zone-8
Legend
MSMs Percentage
5.5 - 7.0 %
7.1 - 11.5 %
11.6 - 12.5 %
12.6 - 15.5 %
15.6 - 23.0 %
0
0.5
1
2
Kilometers

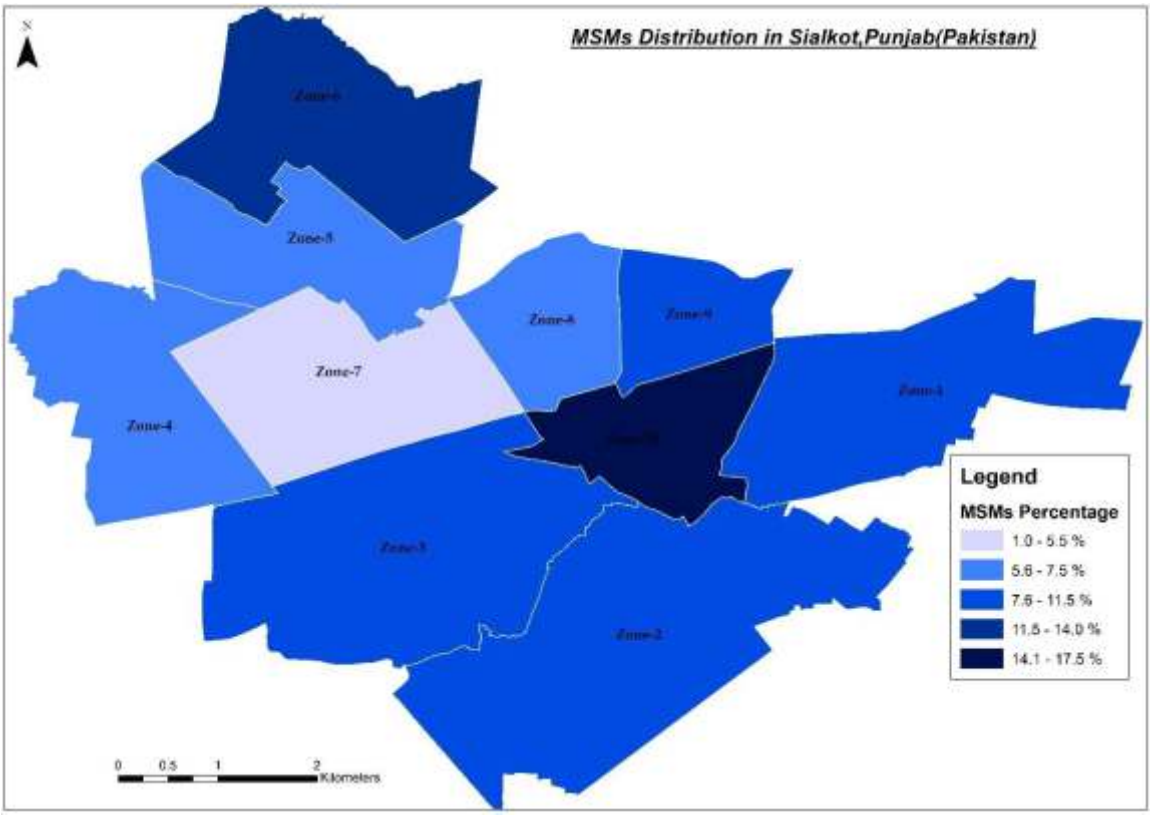

MSMs Distribution in Peshawar,KPK(Pakistan)
Legend
MSMs Percentage
0.5 - 1.5 %
1.6 - 2.0 %
2.1 - 3.0 %
3.1 - 9.0 %
9.1 - 17.0 %
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
Zone-17
Zone-18
Zone-19
Zone-20
0 2 4 8
Kilometers

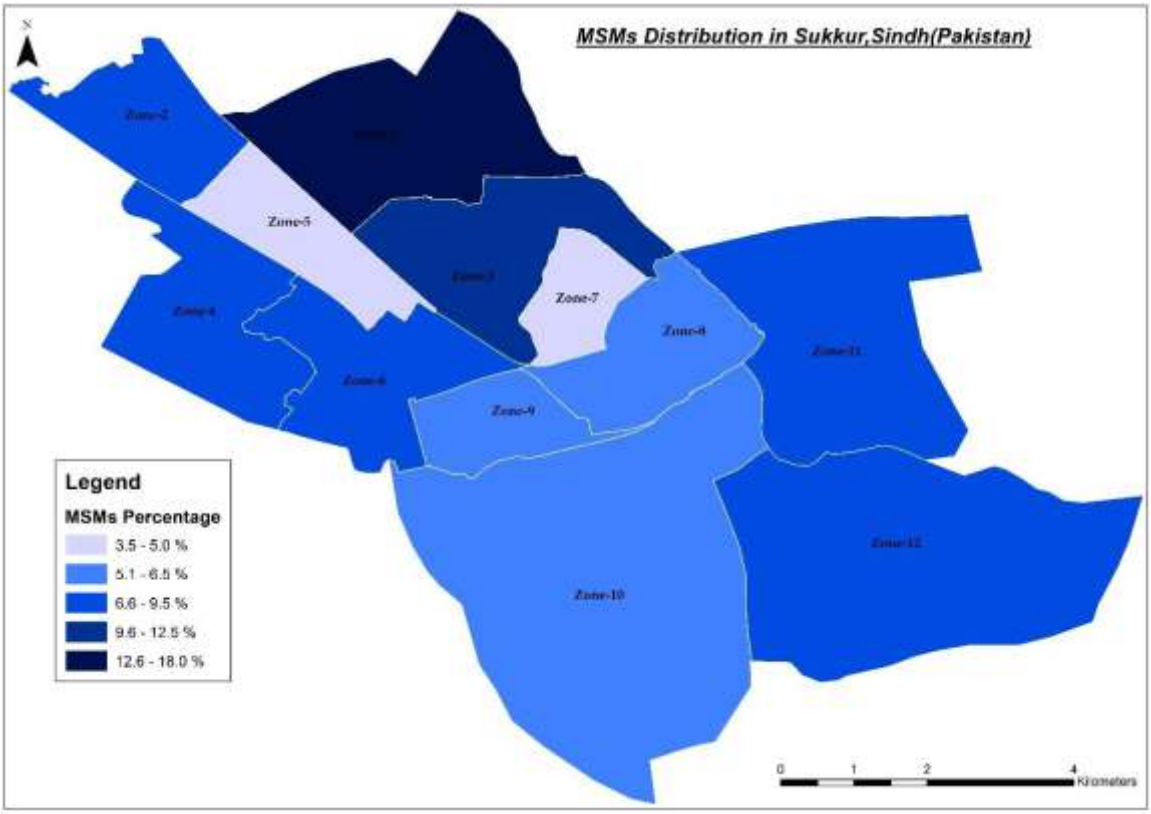

MSMs Distribution in Quetta,Balochistan(Pakistan)
Legend
MSMs Percentage
N/A
0.1 - 4.5 %
4.6 - 7.0 %
7.1 - 7.5 %
7.6 - 8.0 %
8.1 - 10.0 %
Zone-1
Zone-2
Zone-3
Zone-4
Zone-5
Zone-6
Zone-7
Zone-8
Zone-9
Zone-10
Zone-11
Zone-12
Zone-13
Zone-14
Zone-15
Zone-16
0 3 6 12
Kilometers

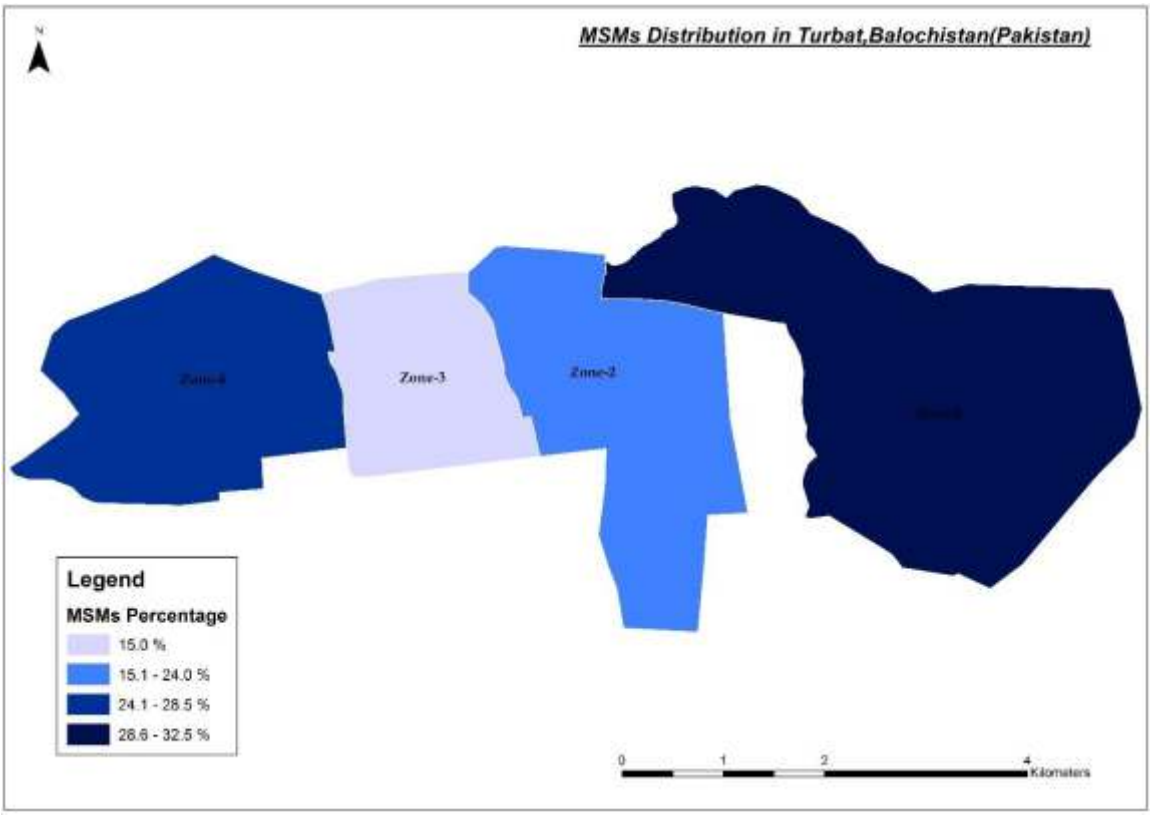

MSMs Distribution in Rawalpindi,Punjab(Pakistan)
N
Zone-9
Zone-12
Zone-15
Legend
MSMs Percentage
1.0 - 2.0 %
2.1 - 4.5 %
4.6 - 7.5 %
7.6 - 9.5 %
9.6 - 11.5 %
0 2 4 8
Kilometers


MSMs Distribution in Sargodha,Punjab(Pakistan)
N
Zone-1
Zone-5
Zone-2
Zone-10
Zone-7
Zone-9
Legend
MSMs Percentage
1.0 - 4.0 %
4.1 - 6.5 %
6.6 - 9.5 %
9.6 - 12.0 %
12.1 - 22.0 %
0 1 2 4
Kilometers


MSMs Distribution in Shiekhupura,Punjab(Pakistan)
N
Legend
MSMs Percentage
1.0 - 3.0 %
3.1 - 8.0 %
8.1 - 8.5 %
8.6 - 40.5 %
Zone-3
Zone-4
Zone-1
0 0.5 1 2
Kilometers


MSMs Distribution in Sialkot,Punjab(Pakistan)
N
Zone-5
Zone-6
Zone-7
Zone-4
Zone-3
Zone-2
Legend
MSMs Percentage
1.0 - 5.5 %
5.6 - 7.5 %
7.6 - 11.5 %
11.5 - 14.0 %
14.1 - 17.5 %
0 0.5 1 2
Kilometers

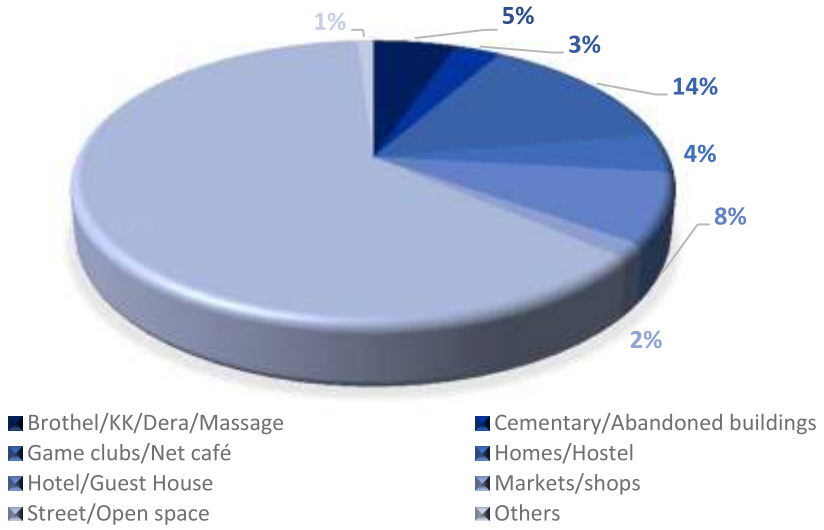

MSMs Distribution in Sukkur,Sindh(Pakistan)
Zone-5
Zone-7
Zone-8
Zone-9
Zone-10
Legend
MSMs Percentage
3.5 - 5.0 %
5.1 - 6.5 %
6.6 - 9.5 %
9.6 - 12.5 %
12.6 - 18.0 %
0 1 2 4
Kilometers


MSMs Distribution in Turbat,Balochistan(Pakistan)
Zone-3
Zone-2
Legend
MSMs Percentage
15.0 %
15.1 - 24.0 %
24.1 - 28.5 %
28.6 - 32.5 %
0 1 2 4
Kilometers

## 7A.4 Types of Geographical Spot

Fig 7.2 presents proportional distribution of geo-spots by typology. The largest proportion of MSM operate through street spots, which form approx. 63% of all geo-spots identified. Among the 23 cities mapped, 5895 street/open space spots were identified, such as public places, parks, public transport stop, public bathrooms, markets, shopping malls etc., Karachi, Lahore, Faisalabad and Multan were the leading cities as cited by MSM where street spots were used to look for other men. The second largest typology was Game clubs/ Net cafés with 1327 spots identified that accounted for about 14% of the total spots mapped. These Game clubs or internet cafés are places where MSM visit to search for and pick up other MSM. The predominant proportion (approx 65%) of Game clubs/ Net cafés spots that were used by MSM to find other MSM were concentrated in three of the cities mapped: namely Bahawalpur (330 spots), Faisalabad (285 spots) and Multan (258 spots). Hotels and guest houses were the third largest typology of MSM spots (approx 8%) mapped. The majority of hotel and guest house MSM spots were reported from Karachi, Quetta, Sukkhur and Multan.

Fig 7.2 Proportional distribution of Spot types for MSM in Pakistan




The most common places where MSM congregate and find other MSMs were categorized as street spots/ open spaces (Peak day: 29,081 MSM). Among the 23 cities mapped, 5,443 street/open space spots were identified, accounting for approximately 63% of all MSM spots. MSM within this typology were found in pubic places, parks, public transport stop, public bathrooms, markets, shopping malls etc., Karachi, Lahore, Faisalabad and Multan were the

leading cities as cited by MSM where street spots were used to look for other men. Table 7.3 shows the estimated number of MSM operating at various types of spots, while Table 7.4 shows the estimates of MSM by spot typology

Table 7.3 Estimated number by spot typology for MSM in Pakistan, 2016

| Spot Typology | Spots | Min | Max | Avg |
|---|---|---|---|---|
| Brothel/KK/Dera/Massage | 461 | 2,242 | 2,963 | 2,603 |
| Cemetery/Abandoned buildings | 256 | 1,296 | 1,695 | 1,496 |
| Game clubs/Net café | 1,225 | 4,957 | 7,100 | 6,028 |
| Homes/Hostel | 380 | 1,710 | 2,333 | 2,022 |
| Hotel/Guest House | 704 | 3,662 | 4,951 | 4,307 |
| Markets/shops | 137 | 624 | 833 | 729 |
| Street/Open space | 5,443 | 24,782 | 33,381 | 29,081 |
| **Grand Total** | **8,606** | **39,273** | **53,257** | **46,264** |

Table 7.4: Estimated number of MSM by spot typology in all cities mapped, 2016

| City | Type of spot | Spots | Min | Max |
|---|---|---|---|---|
| Bahawalpur | Brothel/KK/Dera/Massage | 14 | 42 | 71 |
| | Cemetery/Abandoned buildings | 41 | 145 | 215 |
| | Game clubs/Net café | 330 | 1,173 | 1,634 |
| | Homes/Hostel | 1 | 7 | 8 |
| | Hotel/Guest House | 23 | 96 | 129 |
| | Markets/shops | 20 | 69 | 100 |
| | Street/Open space | 26 | 109 | 158 |
| | Others | | 3 | 6 |
| Bannu | Brothel/KK/Dera/Massage | 1 | 8 | 9 |
| | Cemetery/Abandoned buildings | 11 | 44 | 50 |
| | Game clubs/Net café | 2 | 5 | 8 |
| | Homes/Hostel | 11 | 34 | 48 |
| | Hotel/Guest House | 10 | 37 | 47 |
| | Markets/shops | 1 | 6 | 7 |

| | | | | |
|---|---|---|---|---|
| | Street/Open space | 77 | 276 | 359 |
| DG Khan | Cemetery/Abandoned buildings | 1 | 3 | 4 |
| | Game clubs/Net café | 27 | 63 | 131 |
| | Homes/Hostel | 23 | 68 | 96 |
| | Hotel/Guest House | 5 | 14 | 22 |
| | Markets/shops | 1 | 3 | 4 |
| | Street/Open space | 43 | 90 | 154 |
| | Others | | 3 | 4 |
| Faisalabad | Brothel/KK/Dera/Massage | 4 | 10 | 14 |
| | Game clubs/Net café | 285 | 667 | 1,187 |
| | Homes/Hostel | 1 | 4 | 6 |
| | Hotel/Guest House | 1 | 2 | 5 |
| | Street/Open space | 206 | 475 | 774 |
| | Otthers | | 75 | 141 |
| Gujranwala | Brothel/KK/Dera/Massage | 10 | 22 | 37 |
| | Cemetery/Abandoned buildings | 14 | 48 | 72 |
| | Homes/Hostel | 13 | 32 | 48 |
| | Hotel/Guest House | 1 | 1 | 3 |
| | Markets/shops | 2 | 7 | 9 |
| | Street/Open space | 23 | 70 | 101 |
| | Others | | 5 | 7 |
| Gujrat | Brothel/KK/Dera/Massage | 4 | 15 | 21 |
| | Hotel/Guest House | 5 | 17 | 25 |
| | Street/Open space | 4 | 14 | 19 |
| Hyderabad | Brothel/KK/Dera/Massage | 11 | 77 | 105 |
| | Cemetery/Abandoned buildings | 1 | 10 | 15 |
| | Game clubs/Net café | 31 | 226 | 293 |
| | Homes/Hostel | 10 | 48 | 61 |
| | Hotel/Guest House | 45 | 412 | 526 |
| | Markets/shops | 2 | 13 | 16 |
| | Street/Open space | 72 | 677 | 848 |
| | Others | | 7 | 9 |
| Karachi | Brothel/KK/Dera/Massage | 281 | 1,300 | 1,681 |
| | Cemetery/Abandoned buildings | 138 | 676 | 862 |

| | | | | |
|---|---|---|---|---|
| | Game clubs/Net café | 47 | 213 | 272 |
| | Homes/Hostel | 28 | 118 | 147 |
| | Hotel/Guest House | 210 | 936 | 1,301 |
| | Markets/shops | 20 | 81 | 109 |
| | Street/Open space | 2,771 | 12,488 | 16,538 |
| Kasoor | Brothel/KK/Dera/Massage | 6 | 21 | 28 |
| | Cemetery/Abandoned buildings | 9 | 35 | 45 |
| | Game clubs/Net café | 58 | 212 | 289 |
| | Hotel/Guest House | 51 | 174 | 238 |
| | Markets/shops | 2 | 5 | 7 |
| | Street/Open space | 21 | 63 | 88 |
| Lahore | Brothel/KK/Dera/Massage | 4 | 23 | 27 |
| | Game clubs/Net café | 33 | 114 | 158 |
| | Homes/Hostel | 34 | 151 | 198 |
| | Hotel/Guest House | 3 | 10 | 13 |
| | Markets/shops | 9 | 56 | 68 |
| | Street/Open space | 751 | 2,491 | 3,321 |
| | Others | | 14 | 18 |
| Larkana | Brothel/KK/Dera/Massage | 5 | 20 | 25 |
| | Game clubs/Net café | 70 | 304 | 383 |
| | Homes/Hostel | 2 | 8 | 11 |
| | Hotel/Guest House | 85 | 494 | 695 |
| | Markets/shops | 1 | 6 | 11 |
| | Street/Open space | 73 | 511 | 694 |
| | Others | | 2 | 3 |
| Mirpur Khas | Game clubs/Net café | 6 | 51 | 60 |
| | Hotel/Guest House | 5 | 41 | 39 |
| | Street/Open space | 25 | 158 | 200 |
| | Others | | 4 | 5 |
| Multan | Brothel/KK/Dera/Massage | 43 | 147 | 213 |
| | Cemetery/Abandoned buildings | 2 | 4 | 6 |
| | Game clubs/Net café | 258 | 877 | 1,298 |
| | Homes/Hostel | 87 | 235 | 356 |
| | Hotel/Guest House | 97 | 339 | 473 |

| | | | | |
|---|---|---|---|---|
| | Markets/shops | 26 | 71 | 99 |
| | Street/Open space | 328 | 1,032 | 1,494 |
| | Others | | 63 | 87 |
| Nawabshah | Cemetery/Abandoned buildings | 1 | 3 | 5 |
| | Game clubs/Net café | 27 | 143 | 184 |
| | Homes/Hostel | 17 | 125 | 155 |
| | Hotel/Guest House | 11 | 81 | 102 |
| | Street/Open space | 42 | 163 | 221 |
| | Others | | 2 | 3 |
| Peshawar | Brothel/KK/Dera/Massage | 3 | 8 | 12 |
| | Cemetery/Abandoned buildings | 1 | 3 | 4 |
| | Game clubs/Net café | 3 | 11 | 14 |
| | Homes/Hostel | 18 | 60 | 79 |
| | Hotel/Guest House | 2 | 6 | 9 |
| | Street/Open space | 99 | 218 | 323 |
| | Others | | | |
| Quetta | Brothel/KK/Dera/Massage | 6 | 26 | 30 |
| | Cemetery/Abandoned buildings | 10 | 62 | 67 |
| | Game clubs/Net café | 6 | 55 | 59 |
| | Homes/Hostel | 27 | 153 | 182 |
| | Hotel/Guest House | 24 | 147 | 163 |
| | Markets/shops | 11 | 61 | 68 |
| | Street/Open space | 159 | 838 | 952 |
| Rawalpindi | Brothel/KK/Dera/Massage | 2 | 5 | 8 |
| | Game clubs/Net café | 2 | 7 | 9 |
| | Street/Open space | 400 | 896 | 1,356 |
| Sargodha | Brothel/KK/Dera/Massage | 84 | 342 | 436 |
| | Cemetery/Abandoned buildings | 11 | 41 | 52 |
| | Game clubs/Net café | 98 | 408 | 511 |
| | Homes/Hostel | 12 | 32 | 44 |
| | Hotel/Guest House | 13 | 35 | 48 |
| | Markets/shops | 14 | 51 | 65 |
| | Street/Open space | 139 | 525 | 667 |
| Sheikhupura | Brothel/KK/Dera/Massage | 1 | 3 | 5 |

| | | | | |
|---|---|---|---|---|
| | Homes/Hostel | 47 | 217 | 280 |
| | Hotel/Guest House | 1 | 5 | 6 |
| | Street/Open space | 23 | 83 | 110 |
| Sialkot | Brothel/KK/Dera/Massage | 1 | 4 | 5 |
| | Cemetery/Abandoned buildings | 2 | 6 | 8 |
| | Game clubs/Net café | 7 | 23 | 30 |
| | Homes/Hostel | 1 | 3 | 4 |
| | Hotel/Guest House | 1 | 4 | 5 |
| | Street/Open space | 34 | 105 | 140 |
| | Others | | 23 | 29 |
| Sukkhur | Brothel/KK/Dera/Massage | 3 | 10 | 14 |
| | Cemetery/Abandoned buildings | 2 | 8 | 11 |
| | Game clubs/Net café | 18 | 51 | 65 |
| | Homes/Hostel | 1 | 3 | 3 |
| | Hotel/Guest House | 96 | 313 | 408 |
| | Markets/shops | 6 | 35 | 46 |
| | Street/Open space | 86 | 360 | 457 |
| Turbat | Cemetery/Abandoned buildings | 2 | 16 | 19 |
| | Game clubs/Net café | 2 | 12 | 14 |
| | Hotel/Guest House | 2 | 13 | 15 |
| | Street/Open space | 26 | 196 | 223 |

## 7A.5 Peak Day and Usual Day estimates

Similar to the geographical mapping approach used for other key populations, usual and peak day estimates were also calculated for MSMs who operate at geo-spots. Results show that on usual days (normal week days, non festival days etc.,) the estimated number of MSM are 27% lesser than the numbers which are reported on peak days (weekends, salary days, festivals etc.,) This trend of higher numbers of MSM on each spot on peak days was noticed among all cities mapped, however, the proportion of increase comparative to usual days varied by city.

Table 7.5 presents the estimated numbers for both peak and usual days. It needs to be mentioned that all analysis reported in this report was derived from numbers estimated on a peak day, which is important for designing and allocating resources for service provision.

Table 7.5 : Peak and Usual day estimates of MSM in all cities mapped, 2016

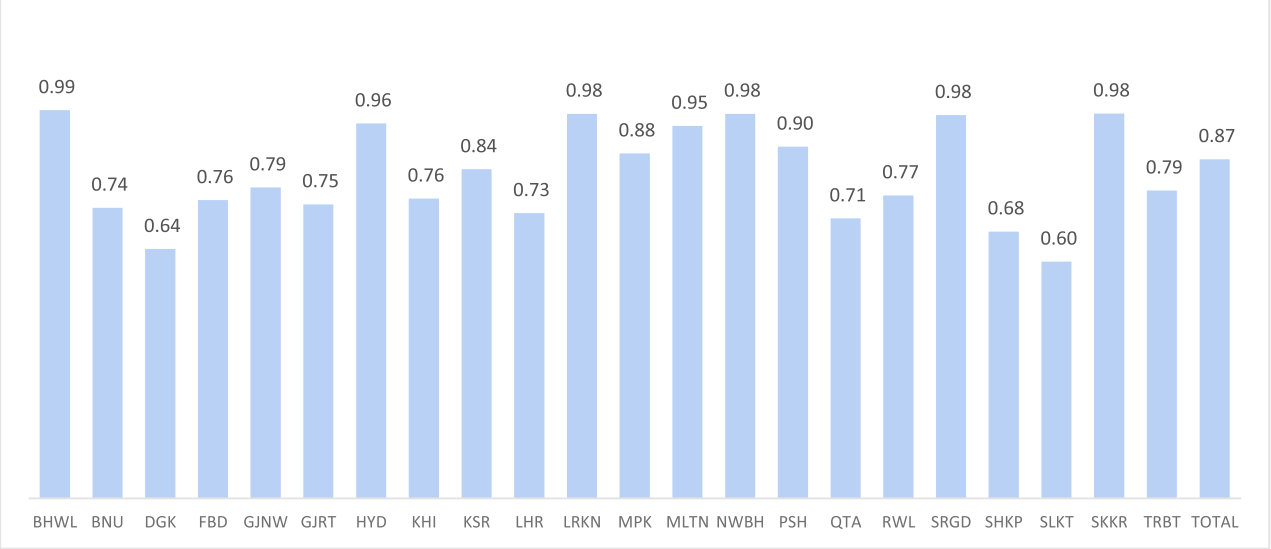
| City | No of spots | Avg No on Peak days | Usual Days | | |
|---|---|---|---|---|---|
| | | | Min | Max | Avg |
| Bahawalpur | 455 | 2,379 | 1,613 | 2,431 | 2,022 |
| Bannu | 113 | 494 | 330 | 476 | 403 |
| Dera Ghazi Khan | 100 | 348 | 236 | 387 | 311 |
| Faisalabad | 497 | 2,016 | 960 | 1,826 | 1,393 |
| Gujranwala | 63 | 325 | 210 | 315 | 262 |
| Gujrat | 13 | 111 | 70 | 108 | 89 |
| Hyderabad | 172 | 1,779 | 1,040 | 1,371 | 1,206 |
| Karachi | 3495 | 18,361 | 12,529 | 17,725 | 15,127 |
| Kasoor | 147 | 613 | 474 | 660 | 567 |
| Lahore | 834 | 5,471 | 3,364 | 4,844 | 4,104 |
| Larkana | 236 | 1,612 | 950 | 1,437 | 1,193 |
| Mirpur Khas | 36 | 300 | 192 | 246 | 219 |
| Multan | 841 | 4,265 | 2,599 | 4,499 | 3,549 |
| Nawabshah | 98 | 712 | 494 | 675 | 585 |
| Peshawar | 126 | 389 | 248 | 390 | 319 |
| Quetta | 243 | 1,521 | 1,289 | 1,117 | 1,461 |
| Rawalpindi | 404 | 1,369 | 694 | 1,200 | 947 |
| Sargodha | 371 | 1,954 | 790 | 1,241 | 1,015 |
| Sheikhupura | 72 | 668 | 428 | 605 | 517 |
| Sialkot | 46 | 207 | 119 | 176 | 148 |
| Sukkhur | 212 | 1,070 | 587 | 902 | 745 |
| Turbat | 32 | 300 | 216 | 255 | 236 |
| **Grand Total** | **8,606** | **46,264** | **29,432** | **42,886** | **36,418** |

## 7A.6 Male Sex Workers

In calculating the estimates for MSM in Pakistan, information and estimates specific to "Male Sex Workers" typology were also obtained. It is important to recognize that the term "Male Sex Workers – MSWs" is different from MSMs (men who have sex with men). While MSM denote all men who have sex with other men as a matter of preference or practice, regardless of their sexual identity or sexual orientation, MSWs include males who provide sexual services i.e. anal or oral, to other males in return for money or other financial benefits. MSWs thus operate in the same manner as female or Transgender sex workers, and usually are younger boys, who provide sexual services to male clients. The estimates presented below include overall averages for MSM as well as for the MSW typology.

The numbers suggest, that the predominant proportion of MSM that are present at geographical spots mapped were Male sex workers (approximately 85%). The cities with the least proportion of the MSM mapped who were Male sex workers were Sialkot, Dera Ghazi Khan and Sheikhupura. On the other hand more than 95% of the MSM mapped informed that they would sell anal sex for money to clients. Some of these cities included Bahawalpur, Hyderabad, Larkana, Multan, Nawabshah, Sukkhur etc., In both mega cities i.e., Karachi and Lahore, approx. 3/4$^{th}$ of the MSM mapped all sell sex to clients.

Figure 7.3: Proportion of MSWs among MSM in all cities mapped, 2016

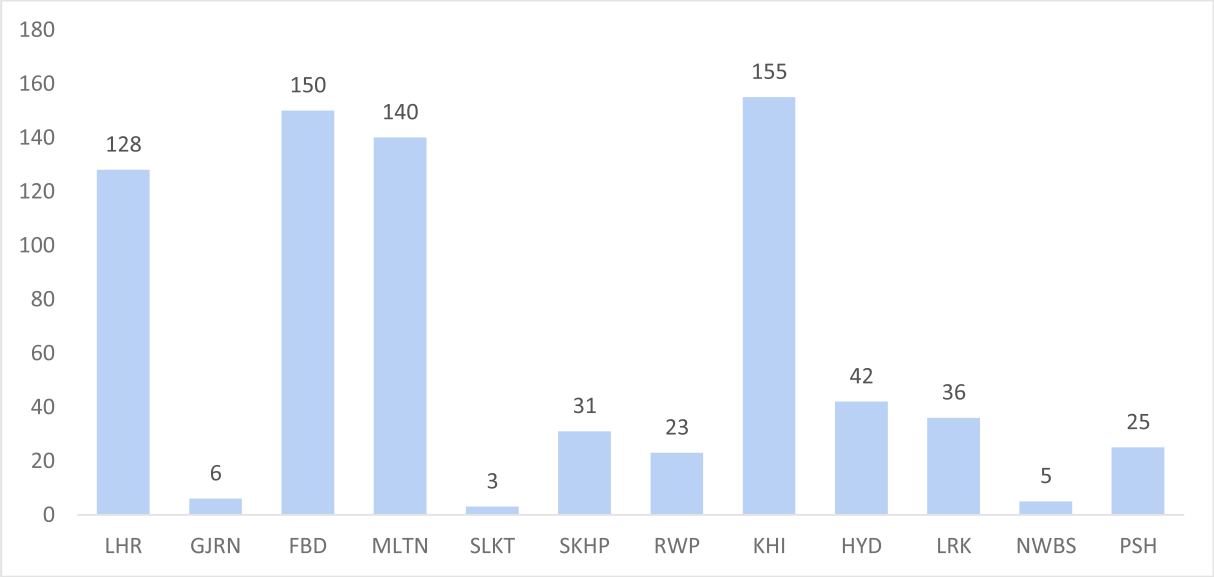


# 7b – INTERNET MAPPING OF MSM

As mentioned earlier, formative research conducted prior to mapping (Focus Group Discussions and in-depth interviews conducted with representatives of MSM community populations and key stakeholders) highlighted a fairly significant proportion of MSM that operate and find sexual partners through the internet and virtual sites. To achieve a better picture of the MSM phenomenon in Pakistan, and to come up with a more realistic number, it was therefore imperative to gather information related to these websites and calculate estimates that includes MSMs operating through these websites.

The overall approach of internet mapping to understand the dynamics and the number of MSM operating through various internet sites, we logged into each site three times a day for 2 consecutive weeks. The number of total registration as well as the number of people active at the site (at that given point in time, when the site was visited) were noted. This information was used to calculate the estimated numbers of MSM active at each MSM site. In addition, interviews were conducted with MSM who specifically look for other MSM partnerships through web based services. Fig 7.4 gives the number of interviews conducted with MSM who associate with other MSM by using internet.

Fig 7.4 Number of interviews conducted with web-based MSM in various cities, 2016.




It is important to mention here that getting information about these sites and was the most critical part of the mapping study. Most MSM don't come to spot and use internet services due to issues of confidentiality and do not want to be exposed. Gaining their confidence to

participate in this study and provide information about their covert behaviors and activities was a huge challenge and needed high level of community support. It is evident from the higher number of interviews conducted in cities where longstanding programs and hence a trust with the community exists, which led to a higher number of interviews in Karachi, Lahore, Faisalabad, Multan etc.,

## 7b.1 Estimated Number of Web Based MSM

Due to reasons mentioned above, data about the size of MSM population at the internet was available from the cities shown in Table 7.5. A total number of 27,986 MSM were calculated in the cities that were mapped by estimating the total number of MSM registered at various internet site, which were adjusted for the following two variables:

i) proportion of MSM who use more than one website
ii) number of identities each MSM has on every website

The highest number of MSM who use internet to look for other MSM were estimated in Karachi (10,404), followed by Lahore (5,232) and Rawalpindi (4,258).

It was also noted that a higher proportion of MSM in larger cities (e..g, Lahore and Karachi ) used multiple MSM related websites to seek for MSM partnerships, in contrast to smaller cites and towns, where comparatively smaller proportion of MSM used multiple websites. On the other hand, MSM in bigger cities reported having more than one identity on a single website. e.g., in Karachi, interviewed MSM reported to have on an average of 2 identities at one website, while in Hyderabad, an average number of 1.16 identities were reported at one website by the MSM interviewed.

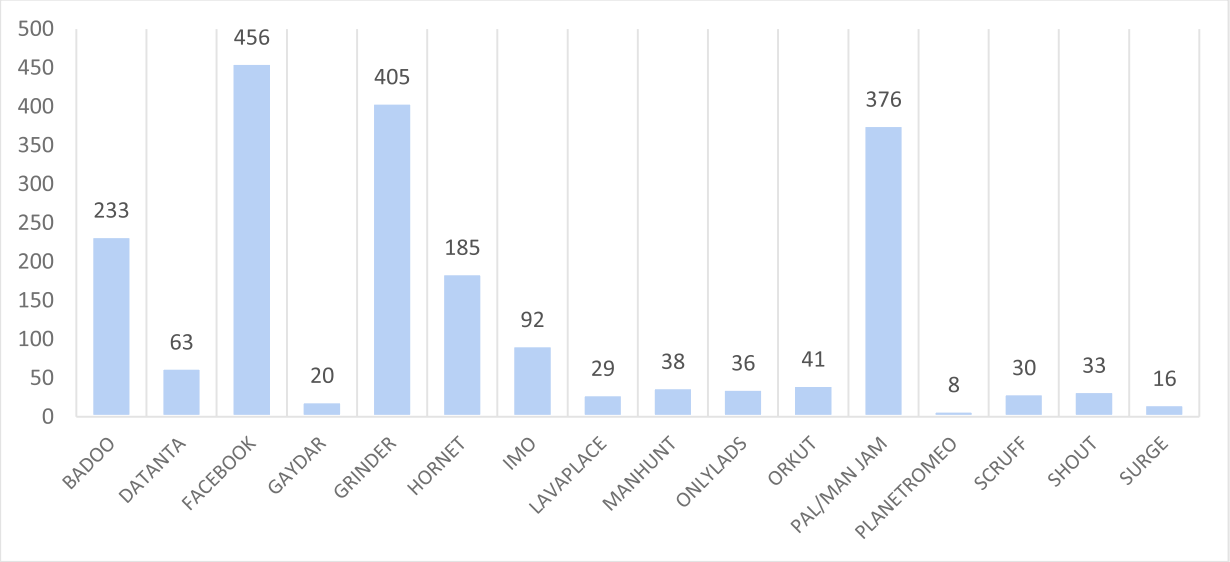
Table 7.6 Estimated No of Internet based MSM in cities mapped, 2016

| CITY | Estimated No |
|---|---|
| Gujranwala | 1,077 |
| Hyderabad | 2,692 |
| Karachi | 10,404 |
| Lahore | 5,232 |
| Larkana | 1,255 |
| Rawalpindi | 4,258 |
| Sargodha | 912 |
| Sialkot | 2,155 |
| | 27,986 |

## 7b.1 Popular Websites

Fig 7.5 shows the various internet websites that are used by MSM. Facebook, Grinder and Pal Jam/Man Jam are the most utilized websites as reported by the respondents.

Fig 7.5 No of MSM operating through various websites in Pakistan, 2016




City wise analysis shows some variations in the choice of website used in each city as shown in Table 7.7. For example the top 3 websites used by MSM in Peshawar are Surge, onlylads and gaydar, which is completely different from websites used commonly in all other cities.

We also looked at the number of MSM contacted by the respondents in the last one month, while For example, in one month, Facebook was used by 456 respondents and each respondent has an average number of 1.5 identities on this page. A total number of 24,701 MSM connected with each other in one month, which led to 1,995 sexual contacts in the last one month. Overall, approximately 120,000 MSM interactions are reported from the cities where web based MSM mapping was conducted, which led to approx. 6,600 sexual contacts in the last month using internet.

Table 7.7 : Websites frequently used by MSM in Pakistan, 2016

| Website | No of Identities | No of MSM who used this website | Total MSM contacted in the last month | Sexual Contacts in the last month |
|---|---|---|---|---|
| FACEBOOK | 1.5 | 456 | 24,701 | 1,995 |
| GRINDER | 1.3 | 405 | 16,052 | 838 |

| | | | | |
|---|---|---|---|---|
| PAL/MAN JAM | 1.1 | 376 | 11,942 | 769 |
| BADOO | 1.4 | 233 | 14,898 | 607 |
| HORNET | 1.4 | 185 | 8,991 | 280 |
| IMO | 1.1 | 92 | 3,671 | 157 |
| DATANTA | 1.0 | 63 | 266 | 140 |
| ORKUT | 1.1 | 41 | 2,110 | 62 |
| MANHUNT | 1.0 | 38 | 93 | 28 |
| ONLYLADS | 1.0 | 36 | 117 | 34 |
| SHOUT | 1.0 | 33 | 313 | 38 |
| SCRUFF | 1.0 | 30 | 87 | 27 |
| LAVAPLACE | 1.0 | 29 | 244 | 22 |
| GAYDAR | 1.0 | 20 | 44 | 17 |
| SURGE | 1.0 | 16 | 26 | 10 |
| PLANETROMEO | 1.0 | 8 | 17 | 4 |
| **Grand Total** | **1.3** | **2,701** | **119,922** | **6,607** |

Table 7.8 : Top 4 common Websites used by MSM to associate with other MSM, and no of contacts made in all cities mapped, 2016

| City | Internet site | No of MSM used | Other MSM contacted | Sexual contacts |
|---|---|---|---|---|
| Faisalabad | FACEBOOK | 44 | 9692 | 316 |
| | GRINDER | 24 | 1857 | 93 |
| | BADOO | 23 | 1884 | 69 |
| | IMO | 8 | 592 | 37 |
| Hyderabad | GRINDER | 29 | 328 | 108 |
| | FACEBOOK | 11 | 135 | 41 |
| | ONLYLADS | 5 | 44 | 20 |
| | PAL/MAN JAM | 4 | 27 | 17 |
| Karachi | PAL/MAN JAM | 176 | 970 | 489 |

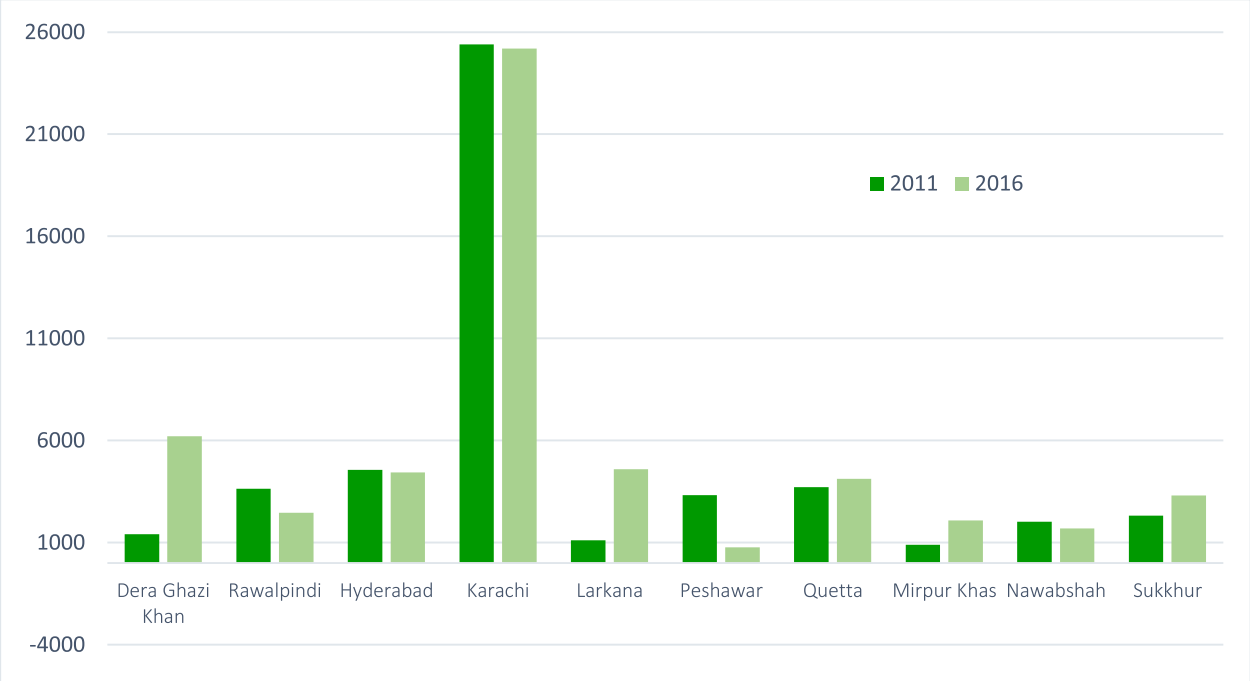
| | | | | |
|---|---|---|---|---|
| | FACEBOOK | 147 | 1304 | 633 |
| | DATANTA | 48 | 232 | 127 |
| | GRINDER | 1 | 8 | 2 |
| Lahore | GRINDER | 123 | 13046 | 425 |
| | BADOO | 118 | 12666 | 450 |
| | PAL/MAN JAM | 113 | 10577 | 192 |
| | HORNET | 91 | 8615 | 222 |
| Larkana | FACEBOOK | 36 | 762 | 140 |
| | GRINDER | 33 | 200 | 16 |
| | HORNET | 22 | 172 | 2 |
| | PAL/MAN JAM | 20 | 173 | 11 |
| Multan | GRINDER | 147 | 414 | 137 |
| | FACEBOOK | 129 | 2172 | 553 |
| | HORNET | 56 | 140 | 41 |
| | BADOO | 44 | 100 | 32 |
| Peshawar | SURGE | 16 | 26 | 10 |
| | ONLYLADS | 9 | 15 | 3 |
| | GAYDAR | 8 | 18 | 7 |
| | FACEBOOK | 7 | 33 | 2 |
| Rawalpinidi | GRINDER | 23 | 152 | 28 |
| | PAL/MAN JAM | 22 | 115 | 34 |
| | BADOO | 10 | 44 | 11 |
| | SCRUFF | 10 | 50 | 10 |
| Sargodha | BADOO | 5 | 19 | 0 |
| | PAL/MAN JAM | 3 | 4 | 0 |
| | GAYDAR | 1 | 1 | 0 |
| Sheikhupura | GRINDER | 20 | 36 | 25 |
| | BADOO | 9 | 50 | 40 |
| | SCRUFF | 9 | 15 | 11 |
| | FACEBOOK | 6 | 30 | 23 |
| Sialkot | ONLYLADS | 3 | 4 | 0 |
| | DATANTA | 1 | 5 | 0 |
| | LAVAPLACE | 1 | 1 | 0 |
| | PAL/MAN JAM | 1 | 1 | 0 |

# 8. CHANGING DYNAMICS OF KEY POPULATIONS

## 8.1 Female Sex workers

When comparing 2016 Round 5 mapping study results with 2011 Round 4 mapping results, it is important to note that the current mapping exercise for FSWs was not conducted in several cities of Punjab such as Lahore, Multan and Faisalabad that previously contributed greatly to the estimates developed in 2011. In 2016 18 cities were mapped to generate FSW estimates, while in 2011 15 cities were mapped. A comparison of the size estimates of the FSW population in the 2 mapping studies is shown in Figure 8.1.

Fig 8.1 A comparison of FSWs estimates in Pakistan over time




Dera Ghazi Khan and Larkana showed the most appreciable increase in the estimates of FSW since 2011, which Sukkur also showing marked increase when compared. Other than these 3 cities, there were no significant differences noted for other cities. One of the key difference noted was the significant decrease in the street based sex work. Sex work this has become more clandestine and SBSWs now tend to operate out of hidden networks managed by pimps and

network operators, individuals who negatively influence the FSWs. This move away from the street is more likely be due to recent threats posed by religious extremism, rather than apprehension, stigma and discrimination caused by law enforcement agencies and others such groups. The scattered distribution of these FSWs makes them very hard to reach, by those conducting surveillance as well as those providing outreach services. While the number of Home based FSW has also reduced significantly, but that is probably now showing as "cell phone based FSWs". Recent improvements in communication technology, especially the availability of cell phones, have revolutionized the sex industry in Pakistan. It is much easier for FSWs to set up times and location of the sexual act with clients via cell phones, without having to stand on streets to find clients. It is extremely difficult to map such FSWs since they are highly mobile, use several phone numbers and vary the numbers that they use. These women can operate independently or through a network operator, aunty or pimp. Identifying FSWs through spots at which they find their clients is also increasing in complexity since not many FSWs are present at each spot for longer times.

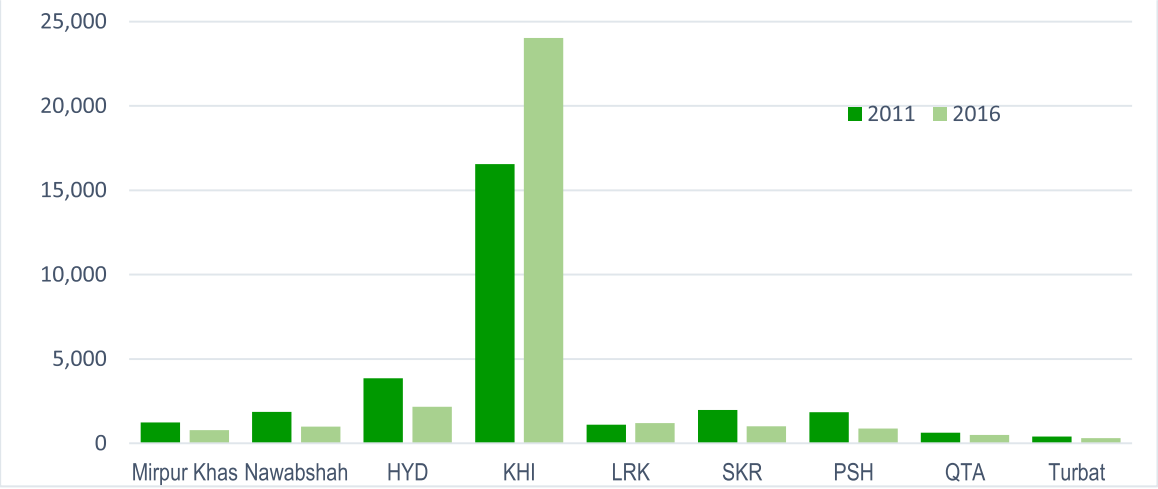
Fig 8.2 Changing typologies among FSWs in Pakistan over time


We have also seen that in comparison to previous studies, the number of FSWs per NWO has reduced. By typology, an increase in the number of Home-based FSWs overall that worked with each NWO increased, while the overall numbers for KK-based FSWs reduced significantly. This largely means that sex work is becoming widely diffused and FSWs are more difficult to reach. In context to the HIV epidemic, this poses a bigger challenge; the more dispersed female sex workers are, the harder it will be to provide services to them.

## 8.2 People who inject Drugs

We compared results of this mapping study with size estimates available from previous mapping studies, to look for any significant changes or emerging trends among PWIDs. This comparison was limited to the cities both mapped previously and included in this round of surveillance. Round 4 had 19 cities mapped for PWIDs while Round 5 had 14 cities mapped. Similar to FSW mapping, PWID mapping did not take place in Lahore and Faisalabad, two cities with large estimates reported for PWIDs in 2011. Their absence from the 2016 mapping have resulted in slightly reduced overall average estimates reported in round 5 comparatively. The difference in the size estimates by cities is shown in Fig 8.3.

Fig 8.3: A comparison of PWID estimates in Pakistan over time




While the estimates from Karachi have shown a large increase in the 5 year comparison period, the estimates for other cities show a slight reduction. One of the reason could be an improvement in the analysis technique; 2016 analysis has incorporated adjustments for duplication by calculating the number of spots each PWID goes to, and then adjusting the overall estimates for duplications. While the numbers have changed, the spot sizes have also shown a reduction over time (i.e., from 7.9 in 2011 to 5.2 in 2016). It is noticed that cities like Karachi, Nawabshah, Larkana and Mirpur Khas reported big PWID spots in 2011, with more than 8 IDUs per spot, which is not very commonly observed in this mapping. While spot sizes have reduced, the number of spots overall—from 5,898 in 2011 to 7,401 in 2016—and particularly in cities like Karachi, Peshawar, Larkana and Nawabshah have increased.

In conclusion, our results show a mixed picture of the trends prevalent among PWIDs. Where average numbers and spot sizes have reported a reduction, the number of spots has shown an increase over the years. These trends could mean that the PWID population is dispersing and large numbers of PWID will not be found congregating and injecting drugs at a few spots only.

Fewer numbers of PWIDs are now connected to each spot. This makes provision of prevention services complicated and demanding.

## 8.3 MSM and TG Populations

When comparing the results of MSM and TG populations of this round with previous estimates, it is important to note that in 2011, mapping was conducted and estimates were generated for Male Sex Workers (MSW) and Transgender sex workers (TGSWs) only. The 2016 mapping exercise has broadened its scope and included Men who have sex with Men (MSM), while obtaining information about MSWs as a typology of MSMs. Similar approach was taken for TGs. It is however important to note that a large proportion of both MSM and TGs mapped worked as sex workers. In addition, the 2016 mapping exercise has also included improved techniques and employed "virtual mapping" in addition to geographical mapping for MSM which led to more reliable estimates. The total numbers estimated for both MSM and TGs showed higher estimates; MSM especially are many fold comparative to 19,119 MSWs mapped in 14 cities in 2011.

Fig 8.4 and 8.5 shows a comparison for MSM and TGs for the mapping studies conducted in 2011 and the current study.

Fig 8.4: A comparison of MSM estimates in Pakistan over time

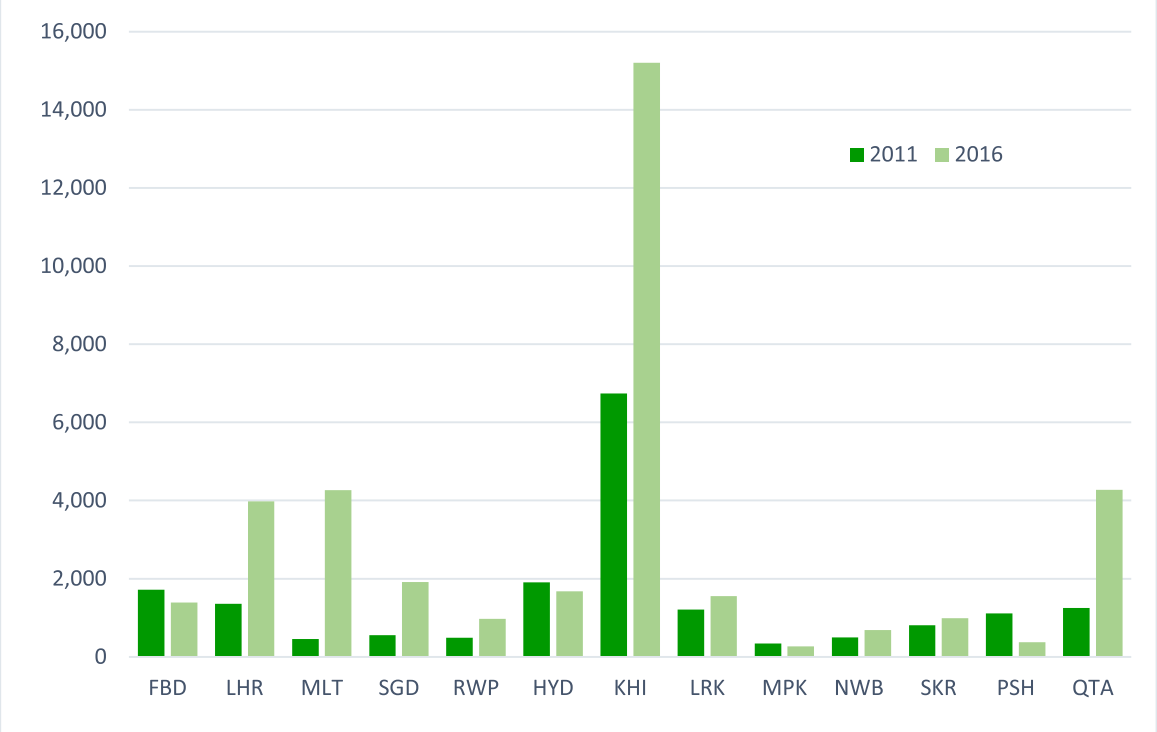
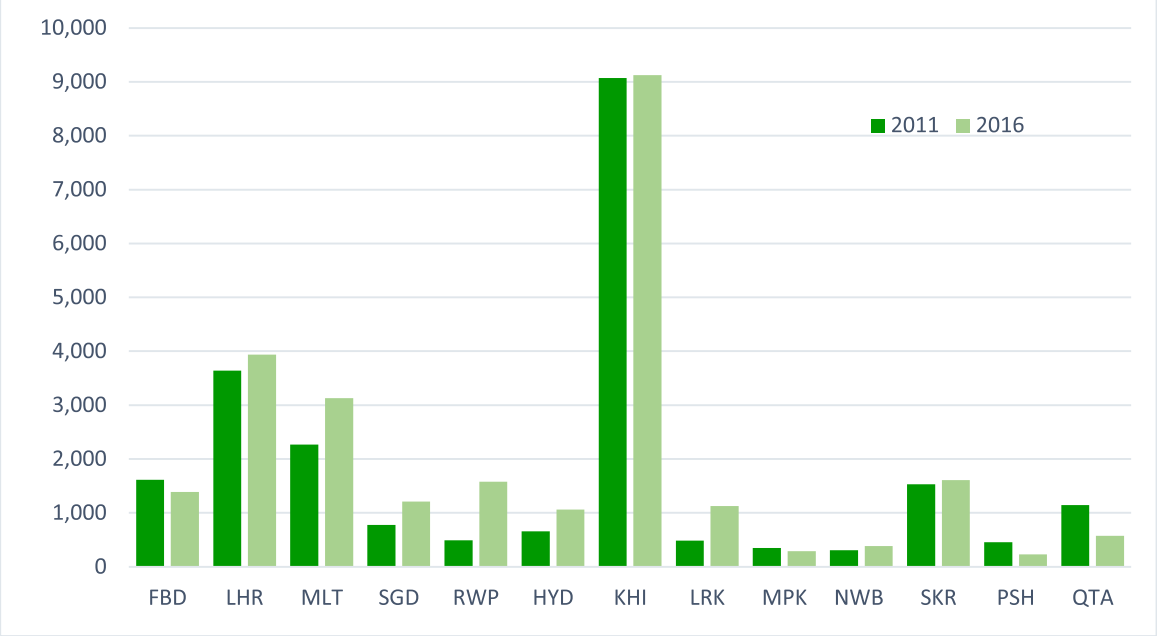


Fig 8.5: A comparison of TGs estimates in Pakistan over time



# 9. CONCLUSIONS and RECOMMENDATIONS

It is well established that without understanding the structure and operational dynamics of these populations, as well as knowing their size it won't be possible to halt the progression of the epidemic. Reliable size estimates of key populations are one of the key information needed by service providers to plan the scale of prevention needed. Not only this study helped estimate sizes of key populations, but also led to the systematic identification of areas where HIV transmission may be greatest, the development of a pragmatic typology of key populations in these areas. The approach focused on identifying these locations, characterizing specific "spots" and an identification of the locations where key populations congregate and could be reached with services. It further collected information about the various types of risk populations, their operational typologies and also identified various key stakeholders and gate keepers involved in these discreet operations. Our study has produced estimates of these populations within all the municipalities studied, based on primary data collected in the field, validated and triangulated against multiple, independent sources of information. We followed a simple and straightforward community-led approach, ensuring active leadership and involvement of the key populations themselves in validating estimates. While we have documented a specific trend in the changing dynamics of the key populations, it is also warranted that the prevention response should stay informed about these developing trends and changing numbers to generate a response which is effective and iterative.

As part of utilization of the results, the knowledge gained from this study could be used to develop MACRO-PLANS, to strategize target cities and towns where provision of services would be most effective and cost beneficial. Thus, services should be targeted in cities with highest numbers in each province to reach coverage levels of 80% to 90%. Within cities, mapping data helped identify spots and locations, where risk of HIV transmission is the highest and can help guide the development of a MICRO-PLAN to set up services. Thus larger spots with high number of key population sizes should be the focus of prevention programs and could be the hubs of service delivery. Likewise, spot lists could be used to identify spots in geo-proximity, which can be clustered and could be allocated to peer outreach workers for outreach and providing services. The study has provided reliable information on the characteristics of spots and in effect the key population typology can facilitate outreach efforts by designing the most appropriate targeted interventions. Thus although the basic prevention services remain the same, the outreach design can be completely different for various typology of sex workers i.e., street based FSWs vs home based FSWs. The information on the operational structures and networks information gathered through this study could be used to develop and strengthen the structural

components of the HIV prevention programs. Interventions built around a population focus not only protect and engage members of these communities, but also makes a major contribution to averting a wider epidemic.

The study has also provided an impetus for further research. There is a need to further explore web based MSM and innovative ways are needed to extend prevention services to this hidden segment of the population. It is difficult to fully comprehend the extent and organizational dimensions of this specific group, without a long term engagement and sustained prevention response.

While efforts need to be focused on learning more about the epidemic and its driving forces, scaling-up of the current national HIV/AIDS response should be the key objective to contain HIV at its present level. The HIV prevention program in Pakistan is patchy and hasn't sustained itself over the last 5 years. The current capacity required for the fully scaled-up design and delivery of appropriate HIV prevention services is far from adequate. Scaling-up will not only require an expansion in NGO and CBO capacity, but a more refined and focused effort to address the HIV prevention challenge.

# 10. ANNEXURES