

DESIGN FACTORS THAT INFLUENCE THE EFFECTIVE USE OF MEYDAN
IN IRAN

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DEDICATION

To my beloved parents, who taught me the best kind of knowledge, supported me in my life and encouraged me to find my abilities,

To my love, Amir Foroughi who gave me endless love, trust and constant encouragement over the years,

Finally, this thesis is dedicated to all those who believe in the richness of learning.

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ABSTRACT

This research addresses the issues of urban square as a public space, where less people are using the space for social interaction as well as participating in any event occurring in the square. Furthermore, most urban planners would just comply with the rules and regulations of the government's department in designing a public space and less consideration about the various needs of the public, especially with regards to social interaction. Consequently, the urban square lost its attraction and function as a public place. This research investigates the relationship between the design factors and effective use of public squares for social interaction in Qazvin, a town in Iran. Theoretical framework of this study was grounded by place, familiarity, hierarchy of human needs and personal construct theories. A quantitative and qualitative method based on a case study approach was employed in this study. A questionnaire survey was used for the quantitative part involving 208 respondents. The qualitative part involved 15 urban designers and architects for the in-depth interviews. The Structural Equation Modelling (SEM) and qualitative content analysis were used in data analysis. The data were triangulated to examine the relationships between the design factors and effective use of public squares for social interaction. The main theoretical contribution of this research is identifying the physical, managerial, geographical, behavioural and psychological design factors that influence the effective use of urban squares in the different geographical and cultural contexts. In addition, the type of activities generated within and surrounding the square has an influence in attracting people to use the square. The result also shows that, when people are satisfied with the design of public squares, they will be more involved in social activities occurring in the place. Theoretically, this study enhances the knowledge on design factors that influence social interaction in terms of effective use of public squares. The findings suggest that any decision to improve the public square should take into consideration the dominant function of the square as perceived by the users.

ABSTRAK

Kajian ini menangani isu dataran bandar dalam ruang awam, di mana terdapat kurangnya orang awam menggunakan ruang tersebut untuk berinteraksi secara sosial disamping mengambil bahagian dalam sebarang aktiviti dalam dataran tersebut. Tambahan pula, kebanyakan perancang bandar hanya mematuhi hasrat kerajaan dalam merekabentuk ruang awam dan kurangnya pertimbangan terhadap pelbagai keperluan penduduk seperti interaksi sosial. Ini mengakibatkan hilangnya tarikan dan fungsi dataran bandar. Kajian ini menyiasat hubungkait di antara faktor rekabentuk dan keberkesanan penggunaan dataran awam bagi interaksi sosial di Bandar Qazvin, Iran. Rangka teoritikal kajian ini berasaskan teori tempat, kebiasaan, hirarki, keperluan manusia dan teori '*personal construct*'. Kaedah kuantitatif dan kualitatif berasaskan kajian kes telah digunakan dalam kajian ini. Tinjauan soalselidik digunakan sebagai metodologi kuantitatif di mana ia melibatkan 208 responden. Bagi bahagian kualitatif melibatkan 15 perekabentuk bandar dan arkitek melalui teknik temubual. Statistik kuantitatif seperti 'permodelan persamaan struktur' (SEM) dan analisis kandungan kualitatif digunakan bagi analisis data. Data telah dianalisis secara bersilang untuk analisis hubungkait faktor rekabentuk dan keberkesanan kegunaan dataran awam untuk interaksi sosial. Sumbangan utama teori bagi kajian ini adalah mengenal pasti faktor rekabentuk fizikal, pengurusan, geografi, perilaku dan psikologi yang mempengaruhi keberkesanan kegunaan dataran awam dalam konteks geografi dan budaya yang berbeza. Sebagai tambahan, jenis aktiviti di dalam dan persekitaran dataran boleh mempengaruhi daya tarikan orang ramai menggunakannya. Penemuan juga mendapati, apabila orang ramai merasa puas hati dengan rekabentuk dataran awam, mereka lebih melibatkan diri dalam aktiviti sosial dalam ruang tersebut. Secara teorinya, kajian ini mengukuhkan pengetahuan terhadap faktor rekabentuk dan pengaruhnya terhadap interaksi sosial dari aspek keberkesanan penggunaan dataran awam. Penemuan menunjukkan sebarang keputusan untuk memperbaiki dataran awam perlu mengambilkira fungsi utama dataran sebagaimana persepsi pengguna.

TABLE OF CONTENTS

| CHAPTER | TITLE | PAGE |
|----------------|--------------------------------------|-------------|
| | DECLARATION | ii |
| | DEDICATION | iii |
| | ACKNOWLEDGEMENT | iv |
| | ABSTRACT | v |
| | ABSTRAK | v |
| | TABLE OF CONTENTS | v |
| | LIST OF TABLES | xiv |
| | LIST OF FIGURES | xvii |
| | LIST OF ABBREVIATIONS | xix |
| | LIST OF APPENDICES | xx |
| 1 | INTRODUCTION | 1 |
| | 1.1 Introduction of the Study | 1 |
| | 1.2 Background of the Problem | 2 |
| | 1.3 Global Concerns | 7 |
| | 1.4 Local Issue in the Case of Study | 8 |
| | 1.5 Research Gap | 13 |
| | 1.6 Research Questions | 15 |
| | 1.7 Aim of the Study | 15 |
| | 1.8 Objectives | 16 |
| | 1.9 Research Underpinnings | 16 |
| | 1.10 Significance of the Research | 18 |
| | 1.11 Definitions of Key Terms | 18 |
| | 1.12 Research Methodology | 20 |
| | 1.13 The Case Study | 21 |
| | 1.14 Scope of the Study | 22 |

| | |
|---|-----------|
| 1.15 Thesis Organization | 22 |
| 2 | |
| <i>LITERATURE REVIEW</i> | 25 |
| 2.1 Introduction | 25 |
| 2.2 Place and Space | 26 |
| 2.3 The Concept of Urban Space | 28 |
| 2.3.1 Public Space | 30 |
| 2.3.1.1 Urban Square | 33 |
| 2.3.1.2 Square Typology | 34 |
| 2.3.1.3 Public Space's Importance | 37 |
| 2.3.1.4 Public Space and People | 38 |
| 2.4 Relevance Theories | 39 |
| 2.4.1 Theory of Place | 40 |
| 2.4.2 Social Theories on Public Space Interaction | 44 |
| 2.4.2.1 Sense of Community | 45 |
| 2.4.2.2 Familiarity | 49 |
| 2.4.2.3 Personal Construct Theory | 50 |
| 2.4.2.4 Theory of Maslow (hierarchy of human needs) | 52 |
| 2.5 Effective Use of Public Square in Terms of Social Interaction | 53 |
| 2.5.1 Social Interaction | 56 |
| 2.5.1.1 Social Activity | 59 |
| 2.5.1.2 Social Environment Perception of Users | 63 |
| 2.6 Design Factors of Public Square | 64 |
| 2.6.1 Physical Factor | 67 |
| 2.6.1.1 Form of a Square | 67 |
| 2.6.1.2 Size of a Square | 69 |
| 2.6.1.3 Visual and Aesthetic Elements | 72 |
| 2.6.2 Behavioural and Psychological Factor | 82 |
| 2.6.2.1 Comfort | 85 |
| 2.6.2.2 Discovery | 87 |
| 2.6.2.3 Joy | 88 |
| 2.6.3 Managerial Factor | 89 |
| 2.6.3.1 Uses and Activities | 89 |
| 2.6.3.2 Eating and Drinking | 91 |
| 2.6.3.3 Vending | 92 |

| | | |
|----------|--|------------|
| | | ix |
| | 2.6.3.4 Maintenance | 93 |
| | 2.6.4 Geographical Factor | 93 |
| | 2.6.4.1 Location | 94 |
| | 2.6.4.2 Accessibility | 94 |
| | 2.7 Theoretical Framework | 97 |
| | 2.7.1 The Relationship between Design Factors of Public Square and Social Interaction | 97 |
| | 2.7.1.1 The Relationship between Design Factors of Public Square and Social Activity | 98 |
| | 2.7.1.2 The Relationship between Design Factors of Public Square and Users 'Perception | 101 |
| | 2.7.1.3 The Relationship between Users' Perception and Social activity | 102 |
| | 2.8 Conclusion | 104 |
| 3 | <i>RESEARCH METHODOLOGY</i> | 106 |
| | 3.1 Introduction | 106 |
| | 3.2 Scope of the Research | 107 |
| | 3.3 Choice of Methodology | 107 |
| | 3.3.1 Review of Previous Methods | 108 |
| | 3.3.2 Main Focus on the Problem | 109 |
| | 3.4 Methodology Adopted in the Research | 110 |
| | 3.5 Chosen Type of Mixed Method | 113 |
| | 3.6 The Needed Data | 114 |
| | 3.7 Research Design | 115 |
| | 3.7.1 Pragmatism as the Knowledge Claim | 118 |
| | 3.8 Quantitative Method | 119 |
| | 3.8.1 Sampling Framework | 119 |
| | 3.8.1.1 Sampling Method | 120 |
| | 3.8.1.2 Determine Sample Size | 121 |
| | 3.8.2 Data Collection Procedure | 122 |
| | 3.8.2.1 Measurement Instrument | 122 |
| | 3.8.2.2 Questionnaire Survey Procedures | 127 |
| | 3.8.2.3 Instrument Translation | 127 |
| | 3.8.2.4 Questionnaire Design | 128 |
| | 3.8.2.5 Addressing Validity | 129 |

| | | |
|----------|---|------------|
| 3.8.2.6 | Addressing Reliability | 135 |
| 3.8.3 | Data Analysis Techniques | 137 |
| 3.8.3.1 | The Justification for Using SEM over other Analysis | 138 |
| 3.8.3.2 | Structural Equation Modeling (SEM) | 139 |
| 3.9 | Qualitative Method | 140 |
| 3.9.1 | Conducting In-Depth Interview | 142 |
| 3.9.2 | Data Collection Methods | 144 |
| 3.9.2.1 | Interviews | 144 |
| 3.9.2.2 | Field Notes | 144 |
| 3.9.3 | Data Collection Process | 144 |
| 3.9.4 | Sampling Frame | 145 |
| 3.9.5 | Interview Profiles | 146 |
| 3.9.6 | Data Analysis | 146 |
| 3.9.6.1 | Transcribing of Data | 146 |
| 3.9.6.2 | Hand Coding | 146 |
| 3.9.7 | Methods of Data Analysis | 147 |
| 3.9.7.1 | Coding Procedures | 147 |
| 3.9.8 | Research Credibility: Validity and Reliability | 148 |
| 3.9.8.1 | Addressing Reliability | 148 |
| 3.9.8.2 | Addressing Validity | 149 |
| 3.9.9 | Direct Field Observation | 151 |
| 3.9.9.1 | Observation Form Design | 152 |
| 3.9.9.2 | Photography | 153 |
| 3.10 | Case Study | 154 |
| 3.11 | Pilot Survey | 154 |
| 3.12 | Triangulation | 157 |
| 3.13 | Conclusion | 158 |
| 4 | <i>INTRODUCTION TO STUDY AREA</i> | 160 |
| 4.1 | Introduction | 160 |
| 4.2 | Historical Background of Public Space in Iran | 160 |
| 4.2.1 | Khorasanic Style (1st to 4th Islamic centuries, 600-950 AD) | 162 |
| 4.2.2 | Razi style (4th to 7th Islamic century, 950 to 1200AD) | 162 |

| | | |
|----------|--|------------|
| 4.2.3 | Azari Style [or anti-style] (7th to 11th Islamic centuries and 1200 to 1500 AD) | 163 |
| 4.2.4 | Esfahan Style (11th to 13th Islamic centuries and 1500 to 1700 AD) | 163 |
| 4.2.5 | Tehran Style (13th to 14th Islamic centuries, 1750 to 1900AD) | 163 |
| 4.2.6 | Modernism (since 14th Islamic centuries, since 1920) | 164 |
| 4.3 | Case Study Area (Qazvin) | 169 |
| 4.3.1 | Geographic Characteristics of Qazvin | 171 |
| 4.3.2 | The Historical Background of Qazvin | 173 |
| 4.3.3 | Structure of the City | 174 |
| 4.3.4 | Open Spaces in Qazvin | 176 |
| 4.4 | Sabze Meydan within the Context of Qazvin | 177 |
| 4.4.1 | The Formation of the Sabze Meydan | 178 |
| 4.4.2 | The Design Features of the Sabze Meydan | 180 |
| 4.4.2.1 | The Role of Geographical Factors of the Sabze Meydan | 181 |
| 4.4.2.2 | The Role of Physical Factor in the Sabze Meydan | 184 |
| 4.4.2.3 | The Role of Behavioral and Psychological factor in the Sabze Meydan | 186 |
| 4.4.2.4 | The Role of Managerial Factor in the Sabze Meydan | 186 |
| 4.4.3 | Social Interaction in the Sabze Meydan | 187 |
| 4.5 | Conclusion | 188 |
| 5 | <i>DATA ANALYSIS AND FINDINGS</i> | 189 |
| 5.1 | Introduction | 189 |
| 5.2 | Data Screening (Accuracy of Data Input, and Outliers) | 190 |
| 5.3 | The Respondents' Profiles | 192 |
| 5.4 | Reliability Analyses of Research Variables | 196 |
| 5.5 | Identify the More Important Design Factors Influence Effective Use of Public Square for Social Interaction | 198 |
| 5.5.1 | Physical Factor | 199 |
| 5.5.1.1 | Form and Size | 199 |
| 5.5.1.2 | Visual and Aesthetic Elements | 201 |

| | | |
|---------|---|-----|
| 5.5.1.3 | Summary on the Semi-Structural Interview and Survey about Physical Factor | 207 |
| 5.5.2 | Behavioral and Psychological Factor | 211 |
| 5.5.3 | Managerial Factor | 216 |
| 5.5.4 | Geographical Factor | 223 |
| 5.5.4.1 | Location | 224 |
| 5.5.4.2 | Accessibility | 225 |
| 5.6 | Activities in Sabze Meydan | 229 |
| 5.7 | Assessment the Effects of Design Factors on Social Interaction | 233 |
| 5.7.1 | Relationship between Design Factors and Social Activity in Public Square | 233 |
| 5.7.1.1 | Relationship between Managerial Factor and Social Activity | 234 |
| 5.7.1.2 | Relationship between Physical Factor and Social Activity | 235 |
| 5.7.1.3 | Relationship between Psychological & Behavioral Factor and Social Activity | 237 |
| 5.7.1.4 | Relationship between Geographical Factor and Social Activity | 239 |
| 5.7.2 | Relationship between Design Factors and Users' Perception about Social Environment Attraction in Public Square | 243 |
| 5.7.2.1 | Relationship between Managerial Factor and Perception of Users about Social Environment Attraction in Public Square | 243 |
| 5.7.2.2 | Relationship between Physical Factor and Perception of Users about Social Environment Attraction in Public Square | 245 |
| 5.7.2.3 | Relationship between Psychological and Behavioral Factor with Perception of Users about Social Environment Attraction in Public Square | 245 |
| 5.7.2.4 | Relationship between Geographical Factor and Perception of Users about Social Environment Attraction in Public Square | 248 |
| 5.8 | Interrelationship between Design Factors, Social Activity and Users' Perception about Social Environment in Square | 251 |
| 5.8.1 | Evaluation of Underlying Assumptions of Multivariate Analysis | 251 |
| 5.8.1.1 | Assessment of Normality | 252 |

| | | |
|----------|---|------------|
| | | xiii |
| | 5.8.1.2 Homoscedasticity | 253 |
| | 5.9 Measurement Model for Main Conceptual Model | 254 |
| | 5.9.1 Exploratory Factor Analysis (EFA) of Main Variables and Factors | 254 |
| | 5.9.2 Estimating CFA Measurement Model | 256 |
| | 5.9.3 Construct Validity for Main Variables in the Current Study | 258 |
| | 5.10 Structural Model | 259 |
| | 5.11 Summary | 265 |
| 6 | <i>CONCLUSION</i> | 267 |
| | 6.1 Introduction | 267 |
| | 6.2 Conclusion to the Findings | 267 |
| | 6.3 Contribution of the Study | 273 |
| | 6.4 Implication for Design Planning of Public Space | 275 |
| | 6.5 Recommendation for Future Research | 276 |
| | 6.6 Conclusion | 278 |
| | <i>REFERENCES</i> | 279 |
| | Appendices A-M | 298-338 |

LIST OF TABLES

| <i>TABLE NO.</i> | <i>TITLE</i> | <i>PAGE</i> |
|------------------|---|-------------|
| 1.1 | Summary of studies on issues | 12 |
| 1.2 | Studies on the contributions of public space and effective use of public space (social interaction) | 13 |
| 2.1 | Square's hierarchy and size | 70 |
| 2.2 | Suggested dimensions of an urban square | 72 |
| 2.3 | The summary of previous researches on design factors of public square and social interaction | 96 |
| 3.1 | Quantitative, qualitative and mixed methods, procedures | 111 |
| 3.2 | Overview of the research methodology of this study | 118 |
| 3.3 | The sample size required for various sampling errors at 95% confidence level simple random sampling | 121 |
| 3.4 | Items of psychological and behavioral factor | 123 |
| 3.5 | The items of physical factor | 124 |
| 3.6 | The items of managerial factor | 125 |
| 3.7 | The items of geographical factor | 126 |
| 3.8 | Factor loadings for all variables | 132 |
| 3.9 | AVE for all variables of this study | 133 |
| 3.10 | CR of all variables of study | 134 |
| 3.11 | Discriminant validity of variables by Fornell-Larcker criterion | 135 |
| 3.12 | Alpha Cronbach coefficient in pilot study | 156 |
| 4.1 | Historical periods of the Iranian squares | 167 |

| | | |
|------|---|-----|
| 4.2 | Assessment of the Iranian squares | 168 |
| 4.3 | Some of the most important tourism attractions in Qazvin | 176 |
| 5.1 | The result of univariate outlier by z-score of items | 191 |
| 5.2 | Questionnaire response rate | 192 |
| 5.3 | The demographic data of participants from the interview | 195 |
| 5.4 | Reliability of research variables | 196 |
| 5.5 | Form and size dimensions of physical factor identified by respondents that affect the effective use of social interaction | 200 |
| 5.6 | Visual complexity components influence effective use of urban square | 201 |
| 5.7 | Physical factor themes from interviews | 208 |
| 5.8 | Physical factor identified by respondents (interview and survey) | 209 |
| 5.9 | Behavioral and psychological factor influences effective use | 211 |
| 5.10 | Categories and subcategories (themes) of behavioral and psychological factor | 214 |
| 5.11 | Behavioral and psychological factor identified by respondents (interview and survey) | 215 |
| 5.12 | Managerial factor influences effective use of urban square | 219 |
| 5.13 | Categories and subcategories (themes) of managerial factor | 220 |
| 5.14 | Managerial factor identified by respondents | 221 |
| 5.15 | Geographical factor influences effective use of urban square | 224 |
| 5.16 | Categories and subcategories of geographical factor | 226 |
| 5.17 | Geographical factor identified by respondents (interview and survey) | 227 |
| 5.18 | Activities elicited from semi-structured interview | 229 |
| 5.19 | Observation results in the Sabze Maydan Square in during weekdays | 231 |
| 5.20 | Observation results in the Sabze Maydan Square in during weekends | 232 |

| | | |
|------|--|-----|
| 5.21 | Correlation between managerial factor and social activity | 235 |
| 5.22 | Correlation between physical factor and social activity | 236 |
| 5.23 | Correlation between psychological and behavioral factor and social activity | 238 |
| 5.24 | Correlation between geographical factor and social activity | 239 |
| 5.25 | The relationship between design factor and social activity in survey and semi-structural interview | 240 |
| 5.26 | Correlation between managerial factor and perception of users about social environment attraction | 244 |
| 5.27 | Correlation between physical factor and perception of users | 245 |
| 5.28 | Correlation between psychological and behavioral factor with perception of users about social environment attraction | 246 |
| 5.29 | Correlation between geographical factor and users' perception about social environment attraction | 248 |
| 5.30 | The relationship between design factors and users' perception in survey and semi-structural interview | 249 |
| 5.31 | Normality test results for variables | 252 |
| 5.32 | Test of Homogeneity of Variances | 254 |
| 5.33 | KMO and Bartlett's Test | 255 |
| 5.34 | Total Variance Explained | 255 |
| 5.35 | Rotated Component Matrixa | 256 |
| 5.36 | First-order confirmatory factor model of design factors | 257 |
| 5.37 | Factor loadings, AVE and CR of design factors, social activity and users' perception | 258 |
| 5.38 | Discriminant validity based on the Fornell–Larcker criterion | 258 |
| 5.39 | Summary of findings | 260 |
| 5.40 | Goodness-of-fit indices for structural models | 260 |
| 5.41 | Findings of first objective | 263 |
| 5.42 | Findings of second and third objective | 264 |

LIST OF FIGURES

| <i>FIGURE NO.</i> | <i>TITLE</i> | <i>PAGE</i> |
|--------------------------|---|--------------------|
| 2.1 | Spatial context of approaching urban square | 28 |
| 2.2 | The relation between social activities and physical environment quality (Gehl 2011) | 32 |
| 2.3 | The components and attributes of effective use square through theories | 40 |
| 2.4 | The components of place (Relph, 1976; Canter, 1977) | 42 |
| 2.5 | Components of sense of place (Punter, 1991; Montgomery, 1998) | 43 |
| 2.6 | Abraham Maslow's (2013) Five-Stage Hierarchy of Basic Human Needs | 53 |
| 2.7 | Conceptual framework | 104 |
| 3.1 | The explanatory sequential design of this study | 114 |
| 3.2 | Research Design | 117 |
| 3.3 | The interview process and analysis of this study | 143 |
| 4.1 | Location of Qazvin Province in North Iran | 172 |
| 4.2 | Natural situation of Qazvin city | 172 |
| 4.3 | Qazvin in Qajar era | 173 |
| 4.4 | Specifying of Qazvin satellite old texture using GIS | 175 |
| 4.5 | Qazvin city map and environment in Safavid era | 176 |
| 4.6 | Identifying the value elements of adjoining the site | 179 |
| 4.7 | Design of the square | 181 |
| 4.8 | Sabze Meydan detached from the edges and bus station | 181 |
| 4.9 | Today location of Sabze Meydan in Qazvin | 182 |
| 4.10 | Sabze Meydan square site and the surroundings context | 183 |

| | | |
|------|---|-----|
| 4.11 | The section of the east west of Sabze Meydan square | 183 |
| 4.12 | Sabze Meydan surrounded by buildings, streets and trees | 184 |
| 4.13 | Benches and short walls | 185 |
| 4.14 | Statues in Sabze Meydan square | 185 |
| 4.15 | Activities inside the square including one stall selling books | 187 |
| 5.1 | Summary of the profiles of the participating respondents of Sabze Meydan | 193 |
| 5.2 | Summary of the components of respondents visiting of Sabze Meydan | 194 |
| 5.3 | The importance of form and size in effective use of square | 199 |
| 5.4 | People seat on edges of Sabze Meydan | 204 |
| 5.5 | People who would like to stay longer | 204 |
| 5.6 | Surfacing and cladding such as bricks, stones, marbles, and concretes | 205 |
| 5.7 | The water running sculpture in the middle of the square | 206 |
| 5.8 | Waterscape in the center of Sabze Meydan | 207 |
| 5.9 | Police station to provide safety in Sabze Meydan | 212 |
| 5.10 | Activities that make Sabze Meydan a public space | 216 |
| 5.11 | Major functions of Sabze Meydan | 217 |
| 5.12 | Flags place in west of the square | 219 |
| 5.13 | The commercial places around the square | 226 |
| 5.14 | Norma P-P plot of regression standardized residual | 253 |
| 5.15 | CFA for design factors, users' perception and social activity | 257 |
| 5.16 | Structural model of this study | 259 |
| 6.1 | Diagram of interrelationship among design factors, social activity, and user's perception | 273 |
| 6.2 | The Cause-and-effect relationship between design factors, users' perception and social activity | 274 |

LIST OF ABBREVIATIONS

| | | |
|--------|---|--|
| AMOS | - | Analysis of Moment Structures |
| AVE | - | Average Variance Extracted |
| CABE | - | Commission for Architecture and the Built Environment |
| CFA | - | Confirmatory Factor Analysis |
| CR | - | Construct Reliability |
| CB | - | Covariance Base |
| DoE | - | Department of the environment |
| EFA | - | Exploratory Factor Analysis |
| GIS | - | Geographic Information System |
| GoF | - | Goodness of Fit |
| KMO | - | Kaiser-Meyer-Olkin |
| PPS | - | Project for Public Spaces |
| PCA | - | principal component analysis |
| SPSS | - | Statistical Package for Social Science |
| UNESCO | - | United Nations Educational, Scientific and Cultural Organization |

LIST OF APPENDICES

| <i>APPENDIX</i> | <i>TITLE</i> | <i>PAGE</i> |
|-----------------|---|-------------|
| A | Questionnaire (English) | 298 |
| B | Questionnaire (Persian language) | 303 |
| C | Literature Review – Articles Selected | 306 |
| D | Output of SPSS | 309 |
| E | Output of AMOS | 326 |
| F | Table observation summary of activity pattern | 331 |
| G | Sample interview | 333 |
| K | Photographs | 334 |
| M | Publications | 338 |

CHAPTER 1

INTRODUCTION

1.1 Introduction of the Study

Urban open spaces are one of the essential components in the structure of cities. In these spaces, people can meet up for distinctive occasions, for example, celebrating, protesting and conversing, thus making urban spaces similar to living entities. Urban open spaces perform a critical part as catalyst for social change and provide meeting places for different social groups (Hajjari, 2009). A number of researches such as Madanipour (2003) and Carmona (2010), show that public space is one of the most significant parts of urban environment that plays a positive role in quality of life. It is a space where citizens can share with people, strangers who are not their relatives, friends or colleagues. Public space is a space for religion, politics, business and sport; it is for peaceful living and basic meeting. Cities need to be psychologically and emotionally sustainable and concerns like the quality of connections between people and the organizational capacity of urban stakeholders, the quality and design of the built environment, become critical, as do issues of spatial segregation in cities (Manzi *et al.*, 2010). It seems clear that, being outdoors causes higher activity types than remaining inside buildings for majority of people in all ages. Hence, the attractiveness of public spaces is important (Thompson, 2013).

In urban environments, public spaces like squares can function as a center for diverse activities and can serve as effective social spaces. Urban squares as public spaces occur in every town and city around the world; nevertheless, some of

them are more user-friendly and successful than others (Ferdous, 2013). Urban squares, in the perspective of public spaces, are important elements of towns since they provide spaces for social interaction. This assists engaging together in various social activities and can make critical contributions to the social development of groups (Savkli and Yilmaz, 2013). It is obvious, the lack of face-to-face interaction and social life in public squares which are essential for a sustainable and effective city. Urban design substances and new planning proposals highlight public spaces, as an opportunity to gather people in different cultures, ages and groups. Attention to the possibility of social activities as a connection amid local businesses (Collaborate the Social Spaces, 2012) and people in the square have this option to serve user a reason to get together (Karimnia, 2012). The square is not only individually significant, but also brings out the variety of beautiful visuals in the form of urban appearance which becomes the image of the particular city (Hj Ayob, 2010). Planners attempt to develop communities that delight in a healthy environment and a systematic and humane society. Many design criteria's are adopted with the optimism that such communities would be created. Unfortunately, the modern urban square environment seems to have ignored an important part of the environmental users, people's needs of behavior and the psychological aspect. It also does not give attention to local character and historical and cultural value. The lack of the cognitive for people, who are the master of the city, does not make it a people oriented place (Liu, 2010).

In this chapter, the background of the study are introduced and discussed. The following section discusses the research problem, in terms of the objectives and the issues involved.

1.2 Background of the Problem

The design of urban public squares can positively or negatively influence the use of public spaces and for that reason, planners have a special responsibility to understand and design to serve the public good (Ferdous, 2013). Over the last few decades, environment–behavior studies have provided a practical way of

determining the interrelationship between human responses and visual features of the built environment. Many studies have focused on public streets and neighborhoods (Mehta, 2009) although, other researches concentrated on the physical attributes of the environment by combining Geographic Information System (GIS) techniques and behavior mapping (Marusic, 2011; Rasuli 2013). In addition, some scholars are concerned about, functional aspects, visual preference, permeability and impressions of enclosed spaces (Stamps, 2005). Nevertheless, it is likely that positive aesthetic response in relation to urban public square depends to a positive extent on the design factors such as visual attributes of architectural features and a logical assumption is that effective urban public squares may also be those that generate certain aesthetic responses. Therefore, it is very important; to investigate the relationship between design qualities of urban public squares and the environmental to develop their efficiency given that public squares serve as a form of urban relief for urban inhabitants.

The relationships between public space design and effective use (social interaction in terms of social activity and users' perception) received not much attention in social and built environment research. Researchers concerned with public space designs have attempted to identify different factors that contribute to social interaction. For instance, Rasidi *et al.* (2012) studied how urban green space design affects urban residents social interaction; Grose (2009) focused on altering associations in public open space; Golicnik (2010) investigated emerging relationships between use of urban park spaces and design; Ngesan *et al.* (2012) studied human behavior and activities in relation to urban park during nighttime; Lubis and Primasari (2012) explained the relationship between people and urban screen in an urban space. Furthermore, some researchers like Rasuli (2013) focused on the relationship between physical activity patterns. She considered the design features of urban public space, focusing on people's activities and various forms of use from passive to active engagement to understand the physical activity patterns relationship with a selected urban public space. However, very few researchers have attempted to investigate the relationships between the different design factors that influence effective use of urban squares in terms of social interaction. Well-designed public open spaces have a tendency to invite more people and a larger variety of

activities than imperfect quality public spaces that seem to be used for necessary activities. While physical activity scholars have considered indexes of high quality public space (Sugiyama *et al.*, 2010), few researches have studied the design of public space for social interaction (Francis *et al.*, 2012).

A new wave of urbanization and physical urban growth, following the rapidly growing population of the cities, imposes new urban needs on the city centers up to a point that they are not capable of handling them anymore. The appearance of modern motorized means of transportation in the old context of cities, many physical changes began to take place in the heart of historic areas. Once when the city centers had been the heart of the social life of cities, they are now made into conduits for traffic. Probably, the broad disrespect is set aside for the effect of the personal vehicle that Gemzoe and Gehl (2001) have defined as aggressive public space. They stated that in historical urban districts where vehicle traffic has increased the advantage, public space has certainly transformed with parking and traffic steadily seizing pedestrian space in squares and streets. It does not take long to destroy city life when not greatly physical space is left and once other restrictions and irritations such as dust, sound and pollution are added (Gehl and Gemzoe, 2001; Carmona, 2010). They signify that the traditional use of public space (mostly squares), as marketing, meeting and connection node has become a conflict. Due to the different social priorities, the competition of the space (like foot, car, market, super mall, face-to-face and virtual communication) and the different ideologies, they note that the current meaning of city as a public space has lost its importance.

These rapid transformations do not only effect on the physical form of the historic cities, but also address many social and economic changes within the traditional life of people. On the one hand, the wholeness of the city forms has been wiped out due largely to the lack of respect for the historic structures and ignoring the socio-physical communication, which is placed in those structures on the other hand (Sarraf, 2010). Most theorists of urban design and planning call for a return to some historic values and principles of urban design and planning, by considering the fundamental differences between today's cities and pre-industrial cities. In this respect, Sarraf (2010), exemplified different city elements

and public areas, which have no more functional use due to the change in the social conditions and he suggests that we can take lessons from their aesthetic considerations in order to make today's cities more attractive. There are consequences of design based on the traffic considerations of modern planning rather than on the arrangement of squares and streets. According to Sarraf (2010), the irregularity of modern squares is obvious and immediately observable to the eye and they are left over spaces of city blocks. One of the characteristics of the historic public spaces such as urban squares is their irregular geometric plans. This character could provide the architects and urban designers with unique solutions to improve the aesthetic quality of urban spaces. Sarraf (2010) declared that not only the recent urban planners do not appreciate this character, but they also attempt to wipe it out by imposing a rectangular grid of new streets on the historic context of cities.

Human behavior and experiences and social interactions in public spaces are believed to be the results of the processes of mind that are influenced by the different features of these spaces. Specifically, this research focuses on the urban square as a public space. The square is the main public space in cities. For example, in many ceremonies such as religious, funeral, festal and political events in nature, the square is a space for gathering (e.g. Dahe Fajar; Ashura and Tasua). In fact, there are no other open spaces for such ceremonies. The characteristics and functions of the administrative-political cities in Iran, created urban spaces as big squares called Meydan. These urban spaces were primarily a place for temporary attendance of the army in front of the government building. Although, the administrative - military and ceremonial aspects of the Meydan have been the main reason for its existence in most Iranian cities, they were not the only one. The Meydan during its evolution has been a place for temporary markets, amenities, ceremonies, New Year celebrations, races and sport competitions, punishing the politically sentenced and guilty people, or hanging criminals in public. The function of the Meydan has been a reflection of its physical form and elements. In nearly all Meydans, a group of buildings such as palaces and other similar administrative-political elements have existed. Apart from these elements, some of the Meydans shaped by residential areas and commercial spaces and some by architectural elements.

A public open space for religious ceremonies is the center of these squares. Due to the central location of these religious open spaces, there is proper access to the communication network of the city. Typically, each of these centers has a special access to the outside of the city and one direct route to the bazaar. There are many potentially lovely squares that could be designed to provide better opportunities for playing, exercising and socializing (Moughtin and Signoretta, 2009). Flexible design of public space consents to rapid reaction to changing needs whereas well organized land use can face various social objectives in a further effective and economical way. Moreover, appropriate organize of the use of public spaces contributes to the social sustainability of cities such as isolation or integration of uses assists to prevent social exclusion and reduce social inequalities (Chan and Lee, 2008). This helps to address the future residents and various needs of existing, providing opportunities and options and contributing to a high quality of life. They accomplish this in ways that enhance the environment, promote social cohesion and inclusion, improve effective use of natural resources and strengthen economic success (Manzi et al., 2010). Public space is the phase on the performance of community life clarifies where the squares, parks and green spaces are all shapes of urban public space. The significance of public space has been addressed by experts in urban planning, social sciences and urban design (Abidin et al., 2010; Carr, 1992).

This research reviews, analyzes and synthesizes the literature on social interaction, design factors and the built environment to define the factors that are related to architecture and social interaction between users in urban square. Afterward, this research also defines and explores the mutual relationships among these factors and creates a model to indicate most important design factors to attract effective use of public square. Therefore, this study attempts to fill the gap in the literature by investigating the relationship between design factors and social interaction and introducing a new intervention strategy for explaining the public square effective use in terms of social interaction.

1.3 *Global Concerns*

Recently, the terms of public space has been redefined in the context of urban space enhancement, leading to socio-spatial developments like social polarization and spatial fragmentation (Zeka, 2011). Throughout history, urban public spaces have been considered an essential part of cities. According to Madanipour (2011), public spaces play a specific role in the life of urban areas, whether as accessible, memorable, or meaningful places. People may feel attached to both the social and physical aspects of public spaces. Therefore, these spaces may be places for socializing and hosting the greatest number of people's interactions (Tibbalds, 2012; Rasuli, 2013). Moreover, their design (physical) attributes such as shape, amenities and comfortable place for sitting and connecting among users may indicate particular meanings to the people, having an important effect on people's social interactions (perceptions and activities). However, current studies on public spaces indicated that some are currently experiencing a decline in their physical design (e.g. form, size, visual and aesthetic elements) in their use (Carmona *et al.*, 2010). In addition, Moughtin (2003) states that contemporary square design ignores old design traditions. Therefore, these squares have become exposed spaces, traffic islands or parking squares because there is no supporting structure around them.

In public square design, urban planners pursue an important impact on urban composition. Most of the squares seems to be monotonous, emptiness and lack of enclosure, seldom are the squares, attractive spaces with a pleasant atmosphere (Zhang, 2006). Thus, in this current context, it becomes vital to assess and examine the actual use of current squares, how and why they are used mainly in terms of their design decline and/or enhancement. Furthermore, the modern urban square environment seems to have ignored an important part of users' behavior and psychological aspects of needs. It also does not address to local character and historical and cultural values. The lack of the cognitive for people as the master of cities is obvious, as square is not people oriented places (Le, 2010). With entrance vehicles and modernism for cities decline, users' roles in urban spaces have changed urban spatial structure roles. Since the invention of motorized traffic, squares have been turned into vehicular crossings of facilitating safe and effective movement (Naz

and Ashraf, 2008). The importance of appropriate knowledge of the relationship between design factors and social interaction (activities) is discussed by previous studies such as Carmona *et al.* (2010). The research problem of this study addresses the lack of actual knowledge about design factors (physical, managerial, geographical, psychological and behavioral) and their integration with social interaction in the process of designing the urban public spaces. This problem forms the major premise to investigate the association between design factors and effective use of public square for people's social interaction in terms of social activity and users' perception. Social activities encompass attending to events, talking in groups either with friends or family and playing with them.

Generally, lack of widely attention to design factors (e.g., physical design in terms of form, size, visual and aesthetic elements) and relation these factors with people's behavior in designing public squares, ignoring traditional design, ignoring important part of users' behavior aspects of needs (behavior and psychological factors), lack of addressing to local character and historical and cultural values in terms of managerial aspect. Thus, several issues on designing of urban square are raised in the study that are related to the importance of design factors in effective use of square in terms of social interaction between users. These issues are lack of public attendance of community and loses attractions and main functions of square. Furthermore, these squares have become exposed spaces, parking squares, seems to be monotonous, emptiness and lack of enclosure, seldom attractive spaces with a pleasant atmosphere.

1.4 Local Issue in the Case of Study

According to Rastbin *et al.* (2012), urban space is not only just a physical concept, but also contains citizen interactions and civic engagements. It means that public spaces bring an imagination for a city's fabric where it is a place of establishing urban activities or an incidence of social interactions (Ferdous, 2013). With the emergence of cars and motorized transportation in the urban life of cities and the rapid growth of population, the cities of Iran are faced with many social and

physical problems. Due to the rapid growth of urban areas, the qualitative patterns of urban design (e.g., public square) are less considered by designers and manufacturers in order to avoid various needs of citizens such as social interaction in public squares (Sadeghi Moghadam *et al.*, 2014). Hence, to solve this problem and promote the effective use of public square, effective environmental qualities based on the useful designing must be improved.

In terms of planning, most urban planners would just comply with the government's intentions without actual knowledge about design factors that result in effective use of public square; as there is lack of the participation of users. Successive public places are characterized by people's attendance and in this way, characters of such spaces are corroborated deeply (Carmona *et al.*, 2010). For instance, the recent planning master plan of Tehran reveals the lack of urban public spaces designed for the goal of people's social gatherings (The ministry of housing and urban development, 2008). As a result, the main elements of a traditional city begin to become fragmented and gradually lose their function and efficiency (Sharifi and Murayama, 2013). In recent years, the people's activity has decreased in public squares and this is a main reason for the loss of some important functions of public square such as encouraging social delight and interaction (Ahmadi *et al.*, 2011). Public spaces in historical cities have been forgotten due to the lack of suitable managements. It relies on a selected public space in Qazvin, Sabze Meydan as a well-known pattern of historical cities. While this square can be a significant factor for sustainability in Qazvin, but it suffers a lack of public attendance of community due to its lack of flexibility and adapting to modern needs of users. However, the rapid growth of population and socio-economy transformation has changed the form of a city (Qazvin). These changes have made it difficult to redefine the lack of public attendance in terms of its relationships to both buildings and the public. As a consequence, Sabze Meydan has begun to be known as the Bazaar and is identified with the public banks and the retail units there (Shahbazi, 2011).

Contemporary Iranian architecture has changed due to the various social and cultural movements and as a result, Iranian traditional architecture has faced unpleasant situations and extreme reactions based on the invasion of modernist

attitudes (Ahmadi *et al.*, 2011). Most squares in Iran are converted to the huge circular spaces for some times already and to be used for passing vehicles only, with their confusing traffic arrangement. Currently, most of Iran's squares are considered symbols of urbanism and they have few social aspects. For example, Sabze Meydan is the intersection of five major roadways and is a very busy crossroads in terms of traffic. At the present, square's major problem other than lack of rapid transit access is a heavy volume of vehicular traffic running through the square. The annual statistics of municipality of Qazvin have shown that street traffic has risen in Sabze Meydan in Qazvin (one of the historical city of Iran) due to the commercial streets - Khayyam and Taleghani avenues, which are located near the square (Building and City Planning/Department, 2012). Due to the traffic streets that surrounding the square, what people perceive as the square is the field that is enclosed by streets and not by surrounding buildings. Lack of organization of walls (physical design), especially in commercial units is a major reason to make inappropriate face of urbanism and losing the attractions. Although, vegetation and middle green space in the square are part of its strengths, nevertheless, the improper use of Sabze Meydan makes an unattractive image of that. It has become a place for young people, rampant cigarette smoking activities, incidence of interruptions to pedestrians and the gathering of hawkers and immoral behavior, to name a few. This space has the ability to design and control the functions and activities and this should be accordingly addressed (Shahbazi, 2011).

Sabze Meydan is democratically an open space for everyone; although, its characteristics as a public square is failing regarding its current use pattern and urban transformation of the district and recently, it is mostly used as a transit spot, instead of performing as a place for social interactions (Ahmadi *et al.*, 2011). Nevertheless, to what extent do users interact, gather and arrange their informal appointments there? Furthermore, present activities in the square do not make personal experiences for people who similar to expend time or cooperate with others; actions like cafés or even community services. Those actions and activities might encourage people to get together, stay longer and socialize; and offer social characteristics for the space and their users; which might increase feelings for the space (Tuan, 2001).

Generally, the lack of actual knowledge about physical transformations, establishing new design factors and their integration with social interaction in the process of designing are major problems, which lead to the investigation of public spaces. This study focuses on factors as classified by Shaftoe (2008) to achieve actual knowledge about the most important design factors of public square. Hence, to obtain actual knowledge about the design factors, social interaction relationships information is gathered and is applied this empirical knowledge in practice. This study first focuses on the theories of place, familiarity, sense of community, hierarchy of human needs (Maslow, 2013) and personal construct theories. Second, the combined methodology including mixed methods (quantitative and qualitative) and field direct observation is conducted. Thus, this study draws heavily on classic theoretical works, including the specific theories of place developed by Canter (1977), Montgomery (1998), Relph (1976), Punter (1991) and social theories adopted by Hill, (1996), Maslow (2013), Kelly (2011) and so on. In terms of the research methodology, this study draws on an integration of mixed methods and Whyte's (1980) empirical research, which is based on the field observation. The research problems can be summarized as follows:

- Public space design (physical) attributes may indicate particular meanings to the people and having a significant impact on people's social interactions. However, recent studies on public spaces show that some are currently experiencing a decline in their physical design and in their use (Carmona *et al.*, 2010).
- Most urban planners would just comply with the government's intentions in designing public space and are less concerned about various needs of citizens such as social interaction (Sadeghi Moghadam *et al.*, 2014). There is a lack of consideration of the relationship between design factors and social interaction, moreover, the urban square loses its attractions and main functions (Shahbazi, 2011).
- Most Iranian squares (e.g., Sabze Meydan in Qazvin) suffer from a lack of public attendance of community due to the lack of the participation of users and

lack of actual knowledge about users' perception (regarding social environment and activity in public squares).

Table 1.1 suggests that these issues were raised across several disciplines. The decline in urban square design and use in urban has become the main interest of research in environmental psychology and behavior; and community health; urban design, environmental planning and landscape architecture disciplines (e.g. Ferdous, 2013; Marusic, 2011; Rasuli, 2013; Sugiyama et al., 2010; Madanipour, 2011; Carmona, 2010; Sadeghi Moghadam et al. ,2014). Lack of consideration of the relationship between design factors and social interaction and the urban square loses its attractions and main functions is an issue relevant in urban design, environmental planning and landscape architecture (e.g. Rasidi et al., 2012; Lubis and Primasari, 2012; Francis et al., 2012; Sarraf , 2010; Abidin et al., 2010; Tibbalds (2012), Sharifi and Murayama (2013), Ahmadi et al.(2011). Lack of public attendance of community issue with regards to public urban square is issue discussed in the disciplines of environmental psychology and behavior (e.g. Golicnik, 2010; Ngesan *et al.*, 2012; Le, 2010; Shahbazi, 2011).

Table 1.1 : Summary of studies on issues

| <i>Disciplines</i> | <i>Authors</i> | <i>Concerns of research</i> |
|--|---|---|
| Environmental psychology and behavior; and community health; urban design, environmental planning and landscape architecture | Examples include: Ferdous (2013), Marusic (2011), Rasuli (2013), Grose (2009), Golicnik (2010), Giles-Corti <i>et al.</i> (2005), Sugiyama et al. (2010), Madanipour (2011), Carmona (2010) Sadeghi Moghadam <i>et al.</i> (2014) | Public spaces show that some are currently experiencing a decline in their design and in their use |
| Urban design, environmental planning and landscape architecture | <i>Examples include:</i> Rasidi <i>et al.</i> (2012), Lubis and Primasari (2012), Francis <i>et al.</i> (2012), Sarraf (2010), Chan and Lee, (2008), Abidin <i>et al.</i> , (2010); Carr (1992), Tibbalds (2012), Sharifi and Murayama (2013), Ahmadi <i>et al.</i> (2011) | Lack of consideration of the relationship between design factors and social interaction and the urban square loses its attractions and main functions |
| Environmental psychology and Behavior | <i>Examples include:</i> Golicnik (2010), Ngesan <i>et al.</i> (2012), Le (2010), Naz and Ashraf (2008), Shahbazi (2011) Tuan (2001) | Lack of public attendance of community |

1.5 Research Gap

A review of previous studies on urban space designing and planning in the thesis recommends that people particularly public square users state a desire for involvement in social and physical activities in public spaces. It is found that there are two categories of researches concerned in this study regarding urban design and planning:

- i) Public space planning and designing factors
- ii) Social interaction and community needs as summarized in table 1.2

Table 1.2 : Studies on the contributions of public space and effective use of public space (social interaction)

| Public space planning and designing factors | | |
|--|--|---|
| Authors | Issue of research | Parameter measured |
| Whyte (2009), Shaftoe (2008), Carmona <i>et al.</i> (2010), Childs(2006), Tibbalds(2012), Gehl(2011), Akkar Ercan(2007), Ferdous (2013), Jalaladdini and Oktay (2011), Sadeghi Moghadam <i>et al.</i> (2014), Rasouli (2013), Sharifi and Murayama (2013) | Public space design factors, Urban form, Environmental qualities, Visual characteristics, Urban public spaces | Design factors (i.e. Geographical, Managerial, Psychological, physical), Aesthetic, security, Economic vitality |
| Social interaction and community needs | | |
| Kim and Kaplan (2004), Mehta (2007), Shuhana and Norsidah (2008), Wood <i>et al.</i> (2010) | Attachment and sense of place, relationship between neighborhood design characteristics and sense of community | Place attachment Social interaction Satisfaction |

A review of recent studies found that most of the researches were from the United States, Europe and South Asia only a few were from Middle East. Consequently, most of the studies on this topic have been conducted in developed countries (i.e. Western and U.S) and less is known regarding the developing countries especially in Iran. As shown in table 1.2, limited comprehensive researches in Iran consider on several aspects of urban space designing. For example, Sharifi and Murayama (2013) investigated how traditional

urban patterns are able to motivate designers and planners to generate integrated urban environments (for social sustainability). They have contributed to the social sustainability of communities and explained the present conditions and the way these factors have lost their function. Furthermore, Sadeghi Moghadam *et al.* (2014) studied on recreating a vibrant city center and attempted to introduce the criteria for responsive environments, characters of a vibrant city center and the main and common features between them. Most of the studies pointed out the functions of urban space designing and planning, but these are not well integrated into urban planning, design and management process in designing urban public space in related to social interaction.

Furthermore, many studies have focused on public streets and neighborhoods (Mehta, 2009) although, other researches concentrated on the physical attributes of the environment by GIS techniques and behavior mapping (Marusic, 2011; Rasuli 2013). However, quality characteristics of the physical spaces have been empirically or theoretically linked with effecting social interaction in public space that consist of the central point presence. For example, food outlets, public art, seating and connected pathways (Evans, 2003; Semenza, 2003; Bedimo-Rung, Mowen and Cohen, 2005); landscapes (Butterworth, 2000; Lund, 2002); and physical activity studied elements of high quality public squares (Sugiyama *et al.*, 2010), fewer empirical studies have determined the design of public space for social interaction (Frumkin, 2003).

In addition, some scholars are concerned about, functional aspects, visual preference, permeability and impressions of enclosed spaces (Stamps, 2005). Nevertheless, it is likely that positive aesthetic response in relation to urban public squares depends on a positive extent on the design factors such as visual attributes of architectural features and a logical assumption is that effective urban public squares may also be those that generate certain aesthetic responses. Therefore, it is very important, to investigate the relationship between the environmental and design qualities of urban public squares to develop their efficiency given that public squares serve as a form of urban relief for urban inhabitants. Nevertheless, only a few studies have focused on this matter in relation to social interaction. Consequently, there is a

lack of empirical verifications on how urban space design specifically public square shapes social interaction pattern of users and how this links to their design features. To address this gap, this research will concentrate on social interaction in relation to public square design and will study the association between the design and social environment (social activity and user's perception).

1.6 Research Questions

According to Shi (2007), investigation examining the cause and effect is an explanatory research that attempts to find answers to research problems about a particular phenomenon. Hence, as an explanatory research, this thesis examines the important questions that are highlighted as follows:

- i. What are the most important design factors that influence the effective use of public squares for social interaction?
- ii. How do design factors of urban squares affect the social interaction?
- iii. What is the interrelationship between the design factors, users' perception and social activity in public squares?

1.7 Aim of the Study

The aim of this research is to establish the relationship between the design factors and effective use of public squares for social interactions as it contributes to the field of urban planning and designing. In doing so, the related challenges in defining the characteristics of the design factors and people's social interaction are considered.

1.8 Objectives

To achieve this aim, the following objectives are set:

- i. To determine the most important design factors that, influence the effective use of public squares for social interaction
- ii. To examine how the design factors in public square affect social interactions
- iii. To determine the interrelationship of design factors, users' perception and social activity in public square

1.9 Research Underpinnings

Several theories assert the importance of social dimensions of the environment on individual behavior such as social environmental theories (Stokols, 1987) and social theories. Prior study's findings from urban planning and environmental psychology present both theoretical and empirical bases for consideration environment-society relationships (Hall, 1966; Taylor, 1997; Whyte, 1980). These studies developed several theories regarding urban spaces such as social theories (i.e. sense of community, familiarity, hierarchy of human needs (Maslow) and personal construct theories) and theory of place that relates to social aspects to individual or group behavior. Chavis and McMillan (1986) proposed a definition for sense of community that includes four elements: integration, fulfillment of needs, membership, influence, and shared emotional connection. The physical features of the environment can donate to improve levels of social interaction amid users, which is only one side of sense of community (Evrin 2006). Furthermore, familiarity can be a very useful predictor factor in preferences for urban environments (Herzog *et al.*, 1976; Lamit, 2003). Based on the theory of Maslow (2013) social interaction is a fundamental human need, according to personal construct theory put forth by Kelly (1955), the mind comprehends the environment

and makes decisions about how to interact with that environment based upon anticipated events.

This research relates to the urban public space uses (specifically public squares) and to the association among their design and users' social interaction. Hence, to gain actual knowledge concerning the physical and activity patterns connections and use this empirical information in practice, generally, this study will apply theory of place besides other theories. Canter (1977) indicated that places as a function of "activities," "physical attributes" and "conceptions." Place as the result of associations of behaviors and physical environment. On the other hand, Gehl (2010) emphasizes that the social activities can be increased by appropriate physical condition. Furthermore, according to Tuan (2001), friendly places involve human feeling and senses that make a special and strong image in people's mind. Relph (1976) and Canter (1977) introduced places as a function of "activities", "physical attributes" and "conceptions. The theory of place addressed that mixed-use buildings and various activities enhance the quality of public open spaces (Gehl, 2010). Identifying and describing places provide a precious connection to design decision-making. Reviewing and understanding of place theories will clarify the important aspects of public spaces that remain constant or may have been changed or forgotten.

Therefore, in this research, other classic theoretical studies including the fundamental urban design theories of Lynch (1992), image of the City (Conzen 1960), urban morphology and the specific theories of place (Ralph 1976, Canter 1977, Punter 1991 and Montgomery 1998) were reviewed. Furthermore, considering the theoretical concepts of place and urban public spaces can provide an understanding of place theories and clarify the significant aspects of public spaces that remain constant. The assessment of the theoretical concepts of public space comprises those features associated with examining people – place connections and related activities. Generally, this research conducted by integrating five theories, in other words, research framework of this study derived from social theories (i.e. sense of community, familiarity, hierarchy of human needs (Maslow, 2013) and personal construct theories) and urban design theories such as theory of place (Carter, 1977).

1.10 Significance of the Research

This research can provide a deep understanding of design factors of public squares by taking into account of the perceptions of different stakeholders who plan, construct and use the city structure. This allows for built environment professionals and the public authorities to understand the impact that the planning, design and development decisions are in the position to appeal the social, psychological and emotional well-being of people. The research is suitable and valuable as it makes helpful information about the issues on effective use of public squares in the territory. Moreover, this research generates a useful, meaningful and reliable assessment model to assess the design quality as well as the effective use level of different public spaces in aspects of social interaction. Besides the functional use, the findings from this research will be practical in academia. Although, there are varieties of distinct features in political, social environment and economic condition and the speed and scale of development in Iran, they have similar purposes of facing the needs, generating sustainable communities and prospects of their people. Hence, this research, which derives from local environment, can act as a source for other Middle Eastern countries and prepare a policy for the urban researchers to accomplish additional studies on related issues in the future.

1.11 Definitions of Key Terms

Effective use: The effective use emphasizes the importance of practices and ongoing commitment to continuously seek more and better ways to use that (Initiative, 2009). In this research, the effective use of public square focuses on social activity and users' perception (about social environment attraction) at Sabze Meydan.

Design Factors: Design – changing existing situations into a new one (Sulaiman, 2012). Design criteria for the making of successful urban squares, in view of both its design factors and users' characteristics (Zeka, 2011) include physical, managerial, geographical, behavioral and psychological factors (Shaftoe, 2008).

Physical factor at the spatial level involves location and accessibility, including facilities, landscape, lighting and leisure space, as well as safety (Nathiwutthikun, 2006). Physical factor addresses the shape of the square, visual complexity and its size (Zeka, 2011).

Behavioral and psychological factor relates to a human being approach, which is outside the geographical, physical and functionalist composition of a square. This factor includes comfort; relaxation; active engagement and passive engagement with the surroundings; joy and discovery (Carr, 1992).

Managerial factor addresses the method that the public space is managed, which is a critical position to be measured for the success of a square. This aspect includes: uses and activities; eating and drinking; vending and maintenance (Carmona *et al.*, 2010).

Geographical factor presents the attributes of the square, as a location. Accessibility constitutes the geographical aspect of good urban square. This factor includes: location and accessibility (Shaftoe, 2008).

Public square: A square is an open space is designed for public use and distinct by the nearby buildings. Public squares have been sites for demonstrations of power, resistance and communal gatherings. They provide a rich environment and serve as a complex performance for investigating place and space as integral to understanding social interaction, community formation and civic engagement (Underwood, 2007). The square is an open area used for community gatherings and can always be found in the heart of the city or town (Liu and Liu, 2013).

Social interaction: The term "social interaction" in this research is defined as the bonds or a relationship between two or more individuals in a community, particularly in the context of multi-cultural diversity. It is also described as one's degree of connectedness and solidarity to one's community (Mahasin and Roux, 2010; Rasidi *et al.*, 2012). Social interaction is a dynamic and changing sequence of

social actions between groups (or individuals) who attempted to take account or impact of each other's subjective experiences or intentions (Jiang *et al.*, 2010). In this research, social interaction will be investigated in two aspects; social activity and users' perception.

Social activity: Social activity is an activity considered suitable on social occasions. It also comprises additional data related to the action, such as the social network, user, time, photo, comments, etc. (Oxford-Dictionary, 1989). In this study, social activity is optional that brings people together in a place to eat, drink, listen to music and participate in national or religious activities.

Perception: Perception can be explained as an active and decided process of obtaining information from the surroundings and cognition as the procedure of thinking during all our senses, which engage learning, generalizing, feeling and attitude configuration, likes as well as dislikes (Gifford, 2002). In this study, the perception of users about social environment attractions is measured by questions suggest by Demir (2007).

1.12 Research Methodology

The research employs a case study method and uses mixed methods, as employed by several researchers (Canter, 1977; Charmaz, 2006; Creswell, 2013; De Vaus, 2002; Lynch, 1992; Rapoport, 1988; Shuhana, 1997) in their studies of the urban environment. The research design is explanatory and the aim is to understand and examine the important design factors and the relationship between design factors and social interaction within selected public space for answering the research questions. As a result, this research is conducted using a combination of questionnaire surveys, in-depth interviews and field observations to recognize the effective use factors and their importance in designing an Iranian square. The survey instruments are designed to measure the research variables, which are, design factors, social activity and social environment perception of users. To perform this, the survey method was employed because it is simple to supervise and distributed,

inexpensive, and offer confidentiality and privacy. In this study, the sample is selected based on the non-probability sampling technique because the researcher is not able to access the list of all users who visit Sabze Meydan. The data were analyzed using quantitative statistics and qualitative content analysis to identify and examine the responses of users towards the influence of design factors on effective use of public square for social interaction.

1.13 The Case Study

Qazvin is one of the main city in Iran with population of 566,773 in 2012 (Statistic Center of Iran, 2012). It is located some 165 km northwest of Tehran. Moreover, Qazvin is a historical city in Iran; the city is a former capital of the Persian Empire. It is a provincial capital today that has been an important cultural center throughout history (Charkhchian and Daneshpour, 2009). It is founded based on the partnership, cooperation and interaction between the urban planners and citizens. Each year, there are some customs, events and carnivals especially at the historical area, where the public space is extremely dynamic and vibrant. These hubs refer to some business local areas of Qazvin such as the districts alongside Imam Khomeini Street, the open space opposite Chehelsotoon Mansion, some tourist centers such as the areas around the old bazaar whereas the parks in this area have not been used (Varjavand, 1996).

At present, the Sabze Meydan area is located in the center of the historical district, immediately beside the main street (Taleghani), where major public transportation areas are located. The square was chosen as a case study for these reasons: First step in selecting the case study was to look for a square, which has clear, visually identifiable physical elements and background. There is much variety of activities in the urban square, which lead to many people using the facilities. Imam Khomeini, Taleghani, Naderi, Ferdowsi, Peighambarieh and Helal Ahmar streets are the main roads that shopkeepers frequent to several times during the day they came to these centers. It was built to connect the north and south parts of Qazvin to each other and many places were built after that, which contributed to

its historical backgrounds (Habibi, 1996b). As Sabze Meydan is a core historic location with heritage value, there are significant number of numerous historical and architectural buildings and open space around it. Moreover, it has been a commercial zone for centuries and therefore; it deserves a research effort (Varjavand, 1996). The square is connected to various major streets and the city center. It is accessible to pedestrian traffic and various nodes of transportation. The square is also considered as one of the most popular in the city, which makes it an excellent choice for this research (Habibi, 1996b).

1.14 Scope of the Study

The research is limited to social activity and perception of users. It does not focus on economic and environmental dimensions. Although, the implications and reasons for a stratified society are more than the scope of this research, it offers that enclosure in public spaces need policy makers to consider authority relations in planning strategy on the public squares uses.

The major scope of this research is to focus on effective use of public squares in Iran's traditional cities and consequently, further generalization from the findings elsewhere is beyond the scope of this research. This study mainly focuses on an old city in Iran, particularly urban squares. In addition, the model derives in this research would be affected on more households and citizens and it is perfect for the middle to large-scale public square's designs with mixed-use developments.

1.15 Thesis Organization

To achieve the research aim and to answer the research questions, this research includes seven chapters.

Chapter I gives an introduction of the study through generally revealing this research's phenomenon. It provides a common background of the topic together with the interpretation for the need of this research effort and three particular research questions. With respect to both practical and theoretical perspectives, the significance of this study is also presented. The specific questions are offered that are originated to empirically examine the suggested theoretical model.

Chapter II reviews the literature relevant in the study on the effective use of public squares leads to the theoretical framework of this study, which is based on the Theory of Place and Social Theories. The information and criteria derived from this literature review formed the research model of the study. This framework of place, social theories and principles provides the basis on which the relationship between design factors and social interaction within public square are investigated.

Chapter III comprises the method of data collection and data analysis based on the research model, along with introducing the case study and explores the methodological procedure in order to answer the research objectives. The research design was explanatory and the aim is to understand and examine the important design factors and the relationship between design factors and social interaction within selected Sabze Mayan for answering the research questions.

Chapter IV presents the introduction of the case study area. Therefore, this chapter attempts to understand its historical evolution to what it is today. It investigates elements of cultural influences that contributed to the formation of the urban square.

Chapter V presents the findings of the research together with discussion. A detailed explanation of the data exploration methods is provided in Chapter 5, which was employed to evaluate the results with the surveys, interviews, the direct observations and activity maps. The complete description of the primary data analysis along with the selected data analysis methods is provided. In the end, the conclusion is drawn with the outcomes of research questions analysis.

Chapter VI argues the implications, contribution and future work. The implications of this study are explained, a discussion is provided of the practical and theoretical contribution of this study. Moreover, other areas of this research are acknowledged. Finally, the chapter suggests future works on the impact of design factors on effective use of squares in terms of social interaction between users.

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