



# A systematic Method for Questionnaire Design: Sense of Security

(Case Study: Malaysian Urban Neighborhoods)

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## Abstract

The significance of sense of security among residents of urban neighborhoods has been the critical issue to improve quality of people's life there. Moreover, there have been several researches with the focus on developing methods considering sense of security evaluation between the inhabitants of urban neighborhoods. The first aim of this research was to provide a method to design sense of security measurement instrument and second was to develop a survey questionnaire examining sense of security in urban neighborhoods. As result, not only the research's contribution to body of urban neighborhoods' knowledge is revealed but also the it can benefit the urban developer as measurement tool due sense of security evaluation in urban neighborhoods.

**Keywords:** Sense of Security, Urban Neighborhoods, Measurement Instrument, Questionnaire Survey.

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## 1. Introduction

According to Harrison and Sarre (1971), the better measurement of environmental image is the result of undertaking the multiple techniques because it provides comparison ability among similarities and differences among extracted results (Özüdoğru S, et. al., 2022; Çakar S, et. al., 2022). In this regard, [Bell and Montarzino \(2007\)](#) revealed the better validation is the result of using diverse measurement methods. In addition, diverse dimensions of urban neighborhoods should be analyzed using more than one technique (Çora H, et. al., 2020; Alnofaiey YH, et. al., 2022). There are several researches developed methods for data measurements for statistical research. For instance, Najafpour et al (2013) undertook social network analysis using UCINET Software and formal method to validate way-finding in Malaysian urban neighborhood and Ghods, Najafpour et al (2014) and Mohsen Ghods, et al (2014) investigated on Structural Equation Model and Factor Analysis using LISREL software (Van TP., 2022). In the research with the title of the systematic review on quality of life in urban neighborhoods, Najafpour et al (2014) highlighted the significance of sense of security in urban neighborhoods and in the research on the systematic review

on sense of security in urban neighborhoods, Najafpour et al (2014) revealed the factors effecting sense of security in urban neighborhoods. Furthermore, Bigdeli Rad et al (2014) revealed the factors influencing safety in urban neighborhoods. Considering the factors influencing sense of security in urban neighborhoods, this research is about providing a method and measurement instrument to examine sense of security in urban neighborhoods. Moreover, there are many related researches undertaking divers methods due to measure the qualitative factors as same as this research (Ghods, M., Najafpour, H. et. al, (2014), Ghods, M., Najafpour, H., Lamit, H. B., (2014), Namin, E. R. et. al, (2013), Naghdbishi, R., Najafpour, H. et. Al, (2019), Najafpour, H. et. al, (2017), Najafpour, H. (2012), Naghdbishi, R., & Najafpour, H. (2019), Najafpour, H. (2015), Rad, V. B., Najafpour, H., et. al. (2015), Rad, V. B., Najafpour, H., et. al. (2019) and Roshan, M., et. al. (2014))

## 2. Research Method

As shown in Figure 1, the steps for developing measurement instrument for this research is provided. Undertaking previous research articles and scholars

helped this research to catch the aim. To do so, eight steps for providing measurement instrument due examining sense of security in urban neighborhoods are prepared as follow:

1. Extracting the relative questions out of the literature of this research.
2. Optimizing the undertaken questions out of the literature to an appropriate type for this research.
3. Validating the designed questions by asking the experts (group Decision making) due providing their comments for its improvement.
4. Translating the survey instrument
5. The sample research selection
6. Validating the content of the survey instrument
7. Revising the survey instrument
8. And deploying the survey questionnaire

### **3. The strategy of research**

#### **3.1 Extracting the relative questions out of the literature of this research**

Najafpour et al (2014) identified factors affecting sense of security in urban neighborhoods such as Physical Environment, Victimization Experience, Physical Participation and Neighborhood Incivilities with their sub-factors named as: “natural Surveillance, appearance, building design and street lighting” for physical environment and “time of day

(during a day and night), walkability, casual interaction between neighbors and social cohesion” for physical participation and “Fear of Crime, disturbance by neighbors or youngsters and perception of incivilities” for victimization experience. Williams (2003) highlighted that because unclear questions causes an incomplete questionnaire or less correct answers developing short and simple questions with specific wording is significant due providing measurement instrument. Therefore, the survey’s items were grouped logical coherent sections by following the sequence constructs and components of the reviewed literature to catch the high accuracy and quality of responses. Finally, the matched questions with principles of research were undertaken without any changes and those with different concept or structure were optimized to get matched with aim of research. To do so, following Tables are illustrated the evoked relative questions consisting of their authors and their publication’s date for each sense of security factors and sub-factors as follow:

**Table 1:** User’s Perceptions and Feelings of Security in Urban Neighborhoods

No	Question
1	How Secure from crime do you consider your neighborhood to be? (Answering Scale: Likert)
2	How would you describe the level of crime in your neighborhood? (Answering Scale: Explanatory)
3	Whether respondent feels secure in the neighborhood? (Answering Scale: Likert)
4	Describe the level of security in your neighborhood: (1)I don't feel safe at all (2)I feel very safe (Answering Scale: Optional)
5	How secure from crime is it where you live? Would you say extremely secure, somewhat secure, slightly secure, or not at all secure? (Answering Scale: Likert)
6	Average used for a “neighborhood security” rating. (Answering Scale: Rating)
7	Personal and personal barriers include: no secure place (Answering Scale: Optional)
8	Are there any areas you avoid? What is the reason? (Answering Scale: Explanatory)
9	What do you think would make cities less frightening? (Answering Scale: Explanatory)
10	What would make you feel more secure? (Answering Scale: Explanatory)
11	Perceptions of sense of security from crime Six items were considered: 1) ratings of the home as a place of security and of refuge 2) sense of neighborhood security (feeling secure walking alone around the neighborhood after dark) 3)Quality of local policing 4)confidence in levels of informal social control (the likelihood of someone intervening if a group of youths was harassing someone in the local area) 5)Honesty of local people in general (likelihood of the return of a purse or wallet without anything missing if lost in the area) (Answering Scale: Rating And Explanatory)

**Authors and Dates:** 1: Vest and Valadez (2005), Weinstein et al. (1999), Huston et al. (2003) 2: Suminski et al. (2005) 3: Lim and Taylor (2005) 4: Humpel et al. (2004) 5: Young and Voorhees (2003), Wilbur et al. (2003), Evenson et al. (2003), Ainsworth et al. (2003) 6: (Wilcox et al. (2003)) 7: Parks et al. (2003), Eyler et al. (2003) 8: H.

Koskela, R. Pain (2000) 9: (H. Koskela, R. Pain(2000) 10: H. Koskela, R. Pain (2000) 11: P. Mason et al. (2013).

**Table 2:** Physical Participation

No	Question
1	Respondents were asked: <b>1)</b> In the last seven days, on how many days did you walk in your neighborhood for at least 20 min at a time?, considering the neighborhood as the local area within a 5-10 min walk of their home and sufficient time to walk 1.6 km (1 mile) at an average pace, which, very roughly, is the return distance from the home to the neighborhood boundary. <b>2)</b> Response categories were combined to give three classes: 0, 1-4 and 5-7 days. In relation to achieving recommended weekly levels of physical activity solely through local walking, these categories correspond very approximately to inactive, insufficiently active, and sufficiently active (recommended amount of physical activity achieved) groups. For brevity, this activity is referred to hereafter simply as “walking”. (Answering Scale: Likert)
2	Would you feel secure have physical participation like going to public ceremonies in your neighborhood? (Answering Scale: Optional)
3	How secure do you feel to do physical participation like going to public ceremonies in your neighborhood? (Answering Scale: Likert)

**Authors and Dates:** 1: P. Mason et al. (2013) 2: Piro et al. (2006) 3: Hoehner et al. (2005) and Sallis et al. (1997)

**Table 3:** Walk-ability

No	Question
1	Is your neighborhood secure for walking? (Answering Scale: Optional)
2	It is secure out walking day or night? (Answering Scale: Optional)
3	Does the crime rate in your neighborhood make it unsecure e or unpleasant to walk in your neighborhood? (Answering Scale: Optional)
4	Would you feel secure walking alone in your neighborhood in the evening? (Answering Scale: Likert)
5	Please score “security for walking”: (1) It is secure to walk or jog alone in my neighborhood during the day (2) Unsecure sidewalks (obstacles to walking) are a problem security (Answering Scale: Optional)
6	How secure from crime do you feel while you are walking or riding your bike in your neighborhood? (Answering Scale: Likert)

7	Is it secure to walk in the neighborhood? (Answering Scale: Optional)
8	How do you perceive security of walking in the area during the day and night? (Answering Scale: Likert)
9	Lacking secure place to exercise; how secure is it to walk or jog in your neighborhood during the day? (Answering Scale: Likert)

**Authors and Dates:** 1: Ball et al. (2007) 2: Ball et al.(2007) And Giles-Corti and Donovan (2002) 3: Mota et al. (2007) 4: Piro et al. (2006) 5: Li et al. (2005) 5: Li et al. (2005) 6: Hoehner et al. (2005) And Sallis et al. (1997) And Troped et al. (2003) 7: Duncan and Mummery (2005) 8: Carnegie et al. (2002) 9: King et al. (2000)

**Table 4:** Casual Interaction between Neighbors

No	Question
1	<p>Social support was assessed in three of the four domains of the Inventory of Socially Supportive Behaviors (emotional, instrumental, and financial support). Residents were asked:</p> <p>(1) Can you count on a friend or relative to give you emotional support?                      (2) When you need some extra help, can you count on a friend or relative to help you with daily tasks?                      (3) When you need some extra money for basic needs, can you count on a friend or relative to help you?                      (4) If you needed help getting to the doctor, is there someone who would help you?                      (5) When you are sick and need extra help, can you count on a friend or relative to help you?</p> <p>Responses included:</p> <p>Yes, always-Yes, sometimes-No, there isn't anyone like that; I don't need help-Yes, but I wouldn't accept help.</p> <p>A summary score for social support ranging from 0 to 5 was created by adding the number of responses to the five questions. Due to limited variability, social support was dichotomized into high level of social support (score of 5) or lower level of social support (score of 0-4) for the purposes of analyses. (Answering Scale: Likert)</p>

**Authors and Dates:** 1: Barrera et al., (1981) And M. De Jesus et al, (2010)

**Table 5:** Social Cohesion

No	Question
1	Social cohesion was assessed on dimensions suggested by Sampson and

	<p>colleagues, examining perceptions of trust and shared values in one's neighborhood. Residents were asked to report their agreement (Strongly agree; Somewhat agree; Somewhat disagree; Strongly disagree) with five statements: (1) People around here are willing to help their neighbors. (2) This is a close-knit neighborhood. (3) People in this neighborhood can be trusted (4) People in this neighborhood generally do not get along with each other. (5) People in this neighborhood do not share the same values.</p> <p>A summary score ranged from 1 to 4 with a higher score indicating higher social cohesion. (Answering Scale: Likert)</p>
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**Authors and Dates:** 1: Sampson et al., 1997, Barrera et al., (1981) And M. De Jesus et al, (2010)

**Table 6:** Time of Day

No	Question
1	Do you feel secure out and about in your neighborhood; (1) during the day (2) during the night (Answering Scale: Optional)
2	Do you feel secure returning to your home when it is dark? (Answering Scale: Optional)
3	Would you specify the security of the neighborhood during the day, at night? (Answering Scale: Likert)

**Authors and Dates:** 1: Harrison et al. (2007) 2: Shenassa et al. (2006) 3: Wilcox et al. (2003)

**Table 7:** Physical Environment (Appearance)

No	Question
1	Which kind of Physical disorder factors exist in your area? (Sum of 8 items: beer/liquor bottles/cans, cigarette/ cigar butts/packages, condoms, drug related paraphernalia, garbage, litter or broken glass, abandoned cars, graffiti and broken windows). (Answering Scale: Optional)
2	Trained surveyors rated residential neighborhoods for vegetation and greenery. (Answering Scale: Optional)
3	Are the streets of your neighborhood so wide and are the blocks of flats so far from the street? Is the existence of balconies making you feel secure? If so? Is there any balcony in the building of your neighborhood? (Answering Scale: Optional)

**Authors and Dates:** 1: Hoehner et al. (2005) 2: Ellaway et al. (2005) 3: H. Koskela, R.

Pain (2000)

**Table 8:** Physical Environment (Building Design)

No	Question
1	Do you have problem with Badly designed buildings/estates' and `badly placed bushes and shrubbery in your area which make you insecure? (Answering Scale: Optional)

**Authors and Dates:** 1: H. Koskela, R. Pain, (2000)

**Table 9:** Physical Environment (Street Lighting)

No	Question
1	For walking at night, would you describe the street lighting in your neighborhood as very good/good; fair; poor/very poor? (Answering Scale: Explanatory)
2	How would you describe the lighting in your neighborhood? (Answering Scale: Likert)
3	Streetlight quality in neighborhood (good, fair, poor). (Answering Scale: Likert)
4	Is the lack of street lights consider as potential barriers in your area? (Answering Scale: Optional)
5	Does poor street lighting' had increased their anxiety about sexual attack in your area? (Answering Scale: Optional)
6	Would street lighting make you feel more secure? (Answering Scale: Optional)

**Authors and Dates:** 1: Vest and Valadez (2005), Young and Voorhees (2003), Wilbur et al. (2003) And Evenson et al. (2003) 2: Suminski et al. (2005) 3: Hooker et al. (2005) and Huston et al. (2003) 4: Eylar et al. (2003) 5: H. Koskela, R. Pain (2000) 6: H. Koskela, R. Pain (2000)

**Table 10:** Physical Environment (Natural Surveillance)

No	Question
1	Are the streets are well lit at night? (Answering Scale: Optional)
2	Could you please rate the Dwelling and immediate environment for amount of litter and presence of graffiti? (Answering Scale: Rating)
3	Would you describe the amount of the cleanliness of your neighborhood? (Answering Scale: Explanatory)
4	Is your neighborhood generally free from garbage, litter, broken glass? (Answering Scale: Optional)



5	Trained surveyors rated residential neighborhoods for litter, graffiti and dog mess. (Answering Scale: Rating)
6	Does your neighborhood is generally free from litter? (Answering Scale: Optional)
7	Whether the streets are well lit? (Answering Scale: Optional)
8	Garden maintenance, street maintenance and general cleanliness (none or almost no rubbish, some rubbish or lots of rubbish). Factor analysis indicated that garden maintenance, street maintenance and level of cleanliness were a single construct. Therefore, they were combined into a single scale labelled 'upkeep' (low-level upkeep or high-level upkeep). (Answering Scale: Likert)
9	Is your neighborhood well maintained? (Answering Scale: Likert)
10	Is your neighborhood kept clean and tidy and are the streets well lit? (Answering Scale: Optional)
11	Does Property maintenance consider as "potential for crime" in your area? (Answering Scale: Optional)
12	Does smells and fumes consider as problems to make your area unsecure? (Answering Scale: Optional)

**Authors and Dates:** 1: Ball et al. (2007) 2: Shenassa et al. (2006) 3: Pikora et al. (2006) 4: Hoehner et al. (2005) 5: Ellaway et al. (2005) 6: Bourdeaudhuij et al. (2003) 7: Giles-Corti and Donovan (2002) 8: L. Wood et al (2008) 9: Hoehner et al. (2005) 10: Duncan and Mummery (2005) 11: Craig et al. (2002) 12: Steptoe and Feldman (2001).

**Table 11:** Victimization Experience

No	Question
1	In your neighborhood how much of a problem was vandalism; assaults and muggings and speeding traffic. Had you been the subject of a personal crime in the last year? (Answering Scale: Likert)
2	Have you had experience of serious crimes known to police, including: murder, non-negligent manslaughter, forcible rape, robbery, aggravated assault, burglary, larceny-theft and motor vehicle theft? (Answering Scale: Optional)
3	Neighborhood security: Amount of police attention required in an area as rated by municipal services employees: (1) Neighborhood requires very special attention regularly; (2) Area that requires attention; (3) Area that can be controlled with normal attention (Answering Scale:

	Optional)
4	Does the crime rate in your neighborhood makes it unsecure to go on walks during the day and during at night? (Answering Scale: Optional)
5	Fear of crime represents a central concept when examining neighborhood dynamics and as such, it represents the key dependent variable in the current analysis. Fear of crime was measured using five Likert items that asked respondents how much they worry about; (1) being the victim of a burglary (2) having items stolen from outside their home (3) being the victim of a robbery (4) being the victim of an assault (5) Or having people involve their family members in selling drugs. Response categories ranged from 1="Not worried" to 3="Very worried. (Answering Scale: Likert)

**Authors and Dates:** 1: Harrison et al. (2007) 2: Doyle et al. (2006) 3: Van Lenthe et al. (2005) 4: Bourdeaudhuij et al. (2003) 5: M.L. Swatt et al., (2013)

**Table 12:** Neighborhood Incivilities (Fear of Crime)

No	Question
1	Now, I would like to ask you a few questions about things that might worry you in this neighborhood. How worried are you that ... (very worry, worry, fair, little worry, no worry)? 1. Someone will try to break into your home while no one is here 2. Someone will try to steal things that you might leave outside your home overnight 3. Someone will try to rob you or steal something from you while you are outside in this neighborhood 4. Someone will try to attack you or beat you up while you are outside in this neighborhood 5. Someone will try to involve your child or family member in selling drugs. (Answering Scale: Likert)

**Authors and Dates:** 1: M.L. Swatt et al. (2013)

**Table 13:** Neighborhood Incivilities (Perceptions of Incivilities)

No	Question
1	Now, think about your street block. I am going to read you a list of issues that might be a problem in your block. After I read each one, please tell me if it is No Problem, Some Problem, or a Big Problem in your block; (1) Dirty or unkempt buildings and lots (2) Vacant or abandoned lots (3) Neighbors who make too much noise (4) Homeless loitering (5) Vandalism [this means destroying property such as breaking windows and so on...] (6) windows of abandoned homes (7) Public drug or

	alcohol use (8) Graffiti (9) Groups of young people hanging out/around (10) Truancy, that is kids not being in school when they should be. (Answering Scale: Likert)
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**Authors and Dates:** 1: M.L. Swatt et al. (2013)

**Table 14:** Neighborhood Incivilities (Disturbance by Neighbors or Youngsters)

No	Question
1	Does disturbances by neighbors or youngsters consider as problem in your area? (Answering Scale: optional)

**Authors and Dates:** 1: Steptoe and Feldman (2001)

### 3.2 Optimizing the undertaken questions out of the literature to an appropriate type for this research

According to the most chosen questions from research articles and scholars using five Likert scale to rank their variables, this research also undertook Likert scale as measurement ranking scale. Following Vagias and Wade M (2006) guidelines in terms of Likert-

type scale response anchors, we established the most appropriate and relevant types of Likert Scale to the aim of this research. The value of established Likert Scales for this research was designed from negative to positive point which is illustrated from the left to the right. Following Tables are indicated the types of Five-Likert scales and the way they are presented in research measurement instrument:

**Table 15:** Diverse Type of Five Likert Scale

<b>Level of Security</b>	Extremely Secure	Secure	Neutral	Insecure	Extremely Insecure
<b>Level of Likelihood</b>	Very Likely	Likely	Neutral	Unlikely	Very Unlikely
<b>Level of Agreement</b>	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
<b>Level of Problem</b>	Not at All Problem	Slightly Problem	Moderately Problem	Problem	Serious Problem
<b>Level of Satisfaction</b>	Extremely Satisfied	Very Satisfied	Moderately Satisfied	Slightly Satisfied	Not at All Satisfied
<b>Level of Interesting</b>	Interesting	Slightly Interesting	Neutral	Slightly Uninteresting	Uninteresting

<b>Level of Anxiety</b>	Not at All Worry	Slightly Worry	Moderately Worry	Worry	Extrimly Worry
<b>Level of Frequency</b>	Always	Often	Sometimes	Rarely	Never
<b>Level of Favorite</b>	Strongly Favorable	Somewhat Favorable	Neutral	Somewhat Unfavorable	Strongly Unfavorable
<b>Level of Being Friendly</b>	Very Friendly	Moderately Friendly	Neutral	Slightly Friendly	Not Friendly at all
<b>Level of Quality</b>	Excellent	Very Good	Good	Fair	Poor
<b>Rating Scale</b>	5	4	3	2	1

### 3.3 Validating the designed questions by asking the experts (group Decision making) due providing their comments for its improvement

After gathering and optimizing the research questions, they have given

to 16 experts in Architectural and Urban Design field to have their recommendation and revisions. And then, five appropriate research questions referring to each factor of sense of security are designed as follow:

**Table 16:** Perception and Feeling of Security in the Neighbourhood

No	Questions
1	How secure is it where you live?
2	How likely is it that you avoid going out of house because you feel unsecure there?
3	Please specify your agreement with; "I feel secure when I am out of my house"
4	How do you describe the problem with security in your neighborhood?
5	How satisfied you are from security of your neighborhood?

**Table 17:** Physical Participation

No	Questions
1	How likely it is for you to go for physical participation like going to public ceremonies in your neighbourhood?
2	According to the current situation of your neighborhood, please specify how interesting is it for you to have physical participation like going to public ceremonies in your neighbourhood:

3	How do you describe the problem with security to have physical participation like going to public ceremonies in your neighborhood?
4	Please specify your agreement with; “physical participation like going to public ceremonies in my neighborhood is common for me”
5	How worry you are that something frightening happen when do physical participation like going to public ceremonies in your neighborhood

**Table 18:** Walk-Ability

No	Questions
1	According to the security of your neighborhood, how likely it is for you to go for walking there?
2	How secure do you feel while you are walking alone in your neighborhood?
3	Please specify the importance of the problem with security for you when you are walking alone in your neighbourhood to you:
4	How worry you are that something frightening happen when you are walking in your neighbourhood?
5	Please specify your agreement with; “this neighborhood is secur for walking around”

**Table 19:** Casual Interaction between Neighbours

No	Questions
1	Do you have connection or interaction with your neighbors?
2	How favorable is it for you to interact or have connetction with your neighbours?
3	How likely it is for you to interact or have connetction with your neighbours?
4	Please specify the importance of interacting or having connetction with your neighbours?
5	Please specify your agreement with; “my nabours are interested to interact or have connection with each other”

**Table 20:** Time of the Day (During a Day and During a Night)

No	Questions
1	How secure do you feel in your neighborhood during the day?
2	How do you describe the problem with feeling insecure during the day in your neighborhood?

3	Do you have experience to feel insecure during a day in your neighborhood?
4	Please specify the importance of the problem with going out in day in your neighborhood?
5	Please specify that how worry you are of going out in day in your neighborhood?
6	How secure do you feel in your neighborhood during the night?
7	How do you describe the problem with feeling insecure during the night in your neighborhood?
8	Do you have experience to feel insecure during a night in your neighborhood?
9	Please specify the importance of the problem with going out in night in your neighborhood?
10	Please specify that how worry you are of going out in night in your neighborhood?

**Table 21:** Social Cohesion

No	Questions
1	Please specify your agreement with “People around here are willing to help their neighbors”?
2	Please specify your agreement with “This is a friendly neighborhood”:
3	Please specify your agreement with “People in this neighborhood can be trusted”:
4	Please specify the importance of the problem with trusting your neighbours in your neighbourhood for you:
5	Please specify that how friendly sre your neighbors to each other in your neighborhood?

**Table 22:** Physical Environment

No	Questions
1	How satisfied you are from physical environment of the streets of your neighbourhood?
2	Please specify your agreement with “The physical environment of this neighbourhood and the way it is desighned is a motivation for me to go

	out and hang around”)?
3	In your opinion, how is the quality of the environmental design in your neighbourhood?
4	Please specify the importance of badly physical environment of the streets of your neighbourhood:
5	When you go out of your house in your neighborhood, do you perceive beautiful and comfortable physical environment of the streets there?

**Table 23: Appearance**

No	Questions
1	Do you have experience to see one or more of physical disorders such as: “beer/liquor bottles/cans, cigarette/ cigar butts/packages, garbage, litter or broken glass, abandoned cars, graffiti or broken windows” on the streets of your neighborhood?
2	Please specify the amount of your satisfaction with your neighborhood according to your perceive of “beer/liquor bottles/cans, cigarette/ cigar butts/packages, garbage, litter or broken glass, abandoned cars, graffiti or broken windows” on the streets of your neighborhood?
3	How do you describe the problem with “beer/liquor bottles/cans, cigarette/ cigar butts/packages, garbage, litter or broken glass, abandoned cars, graffiti or broken windows” on the streets of your neighborhood?
4	How likely it is for you to see one or more of physical disorders such as: “beer/liquor bottles/cans, cigarette/ cigar butts/packages, garbage, litter or broken glass, abandoned cars, graffiti or broken windows” on the streets of your neighborhood?
5	Please specify the importance of the problem with “beer/liquor bottles/cans, cigarette/ cigar butts/packages, garbage, litter or broken glass, abandoned cars, graffiti or broken windows” on the streets of your neighborhood?

**Table 24: Buildings Design**

No	Questions
1	Do you have experience to see badly designed buildings/estates' and `badly placed bushes and shrubbery in your neighborhood?
2	Please specify the amount of your satisfaction with buildings/estates' design and placed bushes and shrubbery in your neighborhood?

3	How do you describe the problem with badly designed buildings/estates' and `badly placed bushes and shrubbery in your neighborhood?
4	How likely it is for you to see badly designed buildings/estates' and `badly placed bushes and shrubbery in your neighborhood?
5	Please specify the importance of the problem with badly designed buildings/estates' and `badly placed bushes and shrubbery in your neighborhood?

**Table 25:** Neighbourhood Incivilities

No	Questions
1	Do you have experience to perceive incivilities in your neighborhood:
2	Please specify that how worry you are of incivilities in your neighborhood:
3	How do you describe the problem with incivilities in your neighborhood?
4	Please specify the importance of the problem with incivilities in your neighborhood?
5	Please specify that how likely you see incivilities in your neighborhood?



**Table 26:** Street Lighting

No	Questions
1	For walking at night, would you describe the street lighting's quality in your neighborhood?
2	Please specify the amount of your satisfaction with the street lighting in your neighborhood?
3	How do you describe the problem with street lighting in your neighborhood?
4	How worry you are from lack of street lighting in your neighborhood?
5	Please specify the importance of the problem with the street lighting in your neighborhood?

**Table 27:** Natural Surveillance

No	Questions
1	Please specify the amount of your satisfaction with Garden maintenance, street maintenance and general cleanliness (none or almost no rubbish, some rubbish or lots of rubbish) in your neighborhood
2	Please specify that how worry you are of Garden maintenance, street maintenance and general cleanliness (none or almost no rubbish, some rubbish or lots of rubbish) in your neighborhood?
3	How do you describe the problem with Garden maintenance, street maintenance and general cleanliness (none or almost no rubbish, some rubbish or lots of rubbish) in your neighborhood?
4	Please specify the importance of the problem with Garden maintenance, street maintenance and general cleanliness (none or almost no rubbish, some rubbish or lots of rubbish) in your neighborhood?
5	Please specify your agreement with "the quality of garden maintenance, street maintenance and general cleanliness is good in my neighborhood"

**Table 28:** Fear of Crime

No	Questions
1	Please specify that how likely you feel that someone break into your home while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?
2	How do you describe the problem with someone break into your home

	while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?
3	Do you have experience of feeling that someone break into your home while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?
4	Please specify the importance of the problem with feeling that someone break into your home while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?
5	Please specify that how worry you are that someone break into your home while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?

**Table 29:** Perception of Incivility

No	Questions
1	Please specify that how likely it is for you to perceive “dirty or unkempt buildings and lots, vacant or abandoned lots, neighbors who make too much noise, homeless loitering, public drug or alcohol use, graffiti or truancy, that is kids not being in school when they should be” in your neighborhood?
2	How do you describe the problem with “dirty or unkempt buildings and lots, vacant or abandoned lots, neighbors who make too much noise, homeless loitering, public drug or alcohol use, graffiti or truancy, that is kids not being in school when they should be” in your neighborhood?
3	Please specify that how worry you are about “dirty or unkempt buildings and lots, vacant or abandoned lots, neighbors who make too much noise, homeless loitering, public drug or alcohol use, graffiti or truancy, that is kids not being in school when they should be” in your neighborhood?
4	Please specify the importance of the problem with “dirty or unkempt buildings and lots, vacant or abandoned lots, neighbors who make too much noise, homeless loitering, public drug or alcohol use, graffiti or truancy, that is kids not being in school when they should be” in your neighborhood;
5	Do you have experience to see “dirty or unkempt buildings and lots,

	vacant or abandoned lots, neighbors who make too much noise, homeless loitering, public drug or alcohol use, graffiti or truancy, that is kids not being in school when they should be” in your neighborhood?
--	---

**Table 30:** Disturbance by the Neighbours or Youngsters

No	Questions
1	Please specify that how likely you feel that you disturb by neighbors or youngsters in your neighborhood?
2	How do you describe the problem with Disturbances by neighbors or youngsters in your neighborhood?
3	Do you have experience to be disturbed by neighbors or youngsters in your neighborhood?
4	Please specify that how worry you are about being disturbed by neighbors or youngsters in your neighborhood?
5	Please specify the importance of the problem with being disturbed by neighbors or youngsters in your neighborhood?

**Table 31:** Victimization Experience

No	Questions
	Options: <ul style="list-style-type: none"> <li>• Being the victim of a burglary</li> <li>• Having items stolen from outside their home</li> <li>• Being the victim of a robbery</li> <li>• Being the victim of an assault</li> <li>• Having people involve their family members in selling drugs</li> <li>• Being attacked or physically injured</li> </ul>
1	Please specify how worry you are of one or more above (part H) mentioned options in your neighborhood:
2	Please specify the importance of the problem with one or more below options:
3	Please specify that how one or more above (part H) mentioned options consider as a problem in your neighborhood:
4	Please specify that how likely it is for you to perceive one or more above

	(part H) mentioned options in your neighborhood:
5	Do you have experience yourself or to see one or more above (part H) mentioned options in your neighborhood:

### 3.4 Translating the survey instrument

As this research is conducted in Malaysian urban neighborhoods and it is important to provide the best understanding of survey for the respondents, the designed questionnaire was prepared in three languages such as English, Malay and Chinese. Due achieving the high quality of translation, we undertook the comparison method between the concept of translated and original survey. To do so, four persons were asked to assess the translation procedure that two of them were aware of Malay language and the other two were expert in Chinese language. Moreover, back-translation (translating the translated survey back to English language) also was undertaken for translating survey to Malay and Chinese language.

### 3.5 The sample research selection

This section was about matching the translated survey questionnaire to the Malay and Chinese questionnaire surveys. To do so, the experts in architectural and Urban Design who were professional in Malay and Chinese languages were

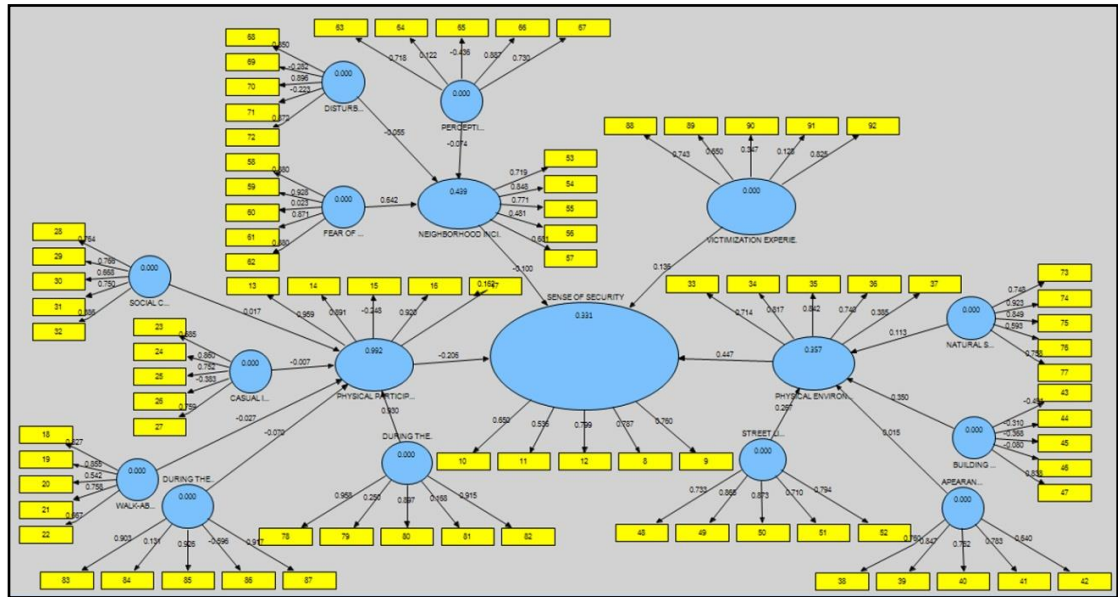
asked to examine the appropriateness and accuracy of developed survey questionnaire. In addition, the Malay and Chinese source of developed survey questionnaire were compared with existing survey questionnaires in Malay and Chinese languages.

### 3.6 Validating the content of the survey instrument (undertaking pilot test)

To discover the accuracy of survey questionnaire and the best questions associating with the aim of the research, the pilot test considering 30 residents in Johor Bahru Neighborhoods, Malaysia is undertaken. The pilot test was carried out between the residents of Taman JP Perdana and Taman Abad equally located at Johor Bahru, Malaysia. To catch more accuracy in distributing pilot surveys, two Malaysian students were asked due assisting researcher. Finally, 27 of returned questionnaire surveys were more than half or completely answered. Then the validity and reliability of returned surveys were analyzed. To do so, undertaking the Partial Least Squares (PLS) approach, the model of the research was developed by identifying the indicators (prepared questions) to

its relevant construct (sense of security factors). Figure 2 presented the designed model for this research

as follow:



**Figure 2:** PLS Model Measurement before Removing Unacceptable Indicators

As shown in Figure 2, 17 constructs with 5 related indicators to each of which is developed for this research. Running the program, the loading measurement for each indicator (question) related to each construct is provided. Calculating the outer model considers as assurance that identified indicators are measuring the constructs in the way they were designed to be measured which illustrates the validity of survey questionnaire.

According to Chin (1998), the values of 0.707 and above are acceptable standardized loading value. Therefore, we removed the values which were less than 0.707 out of the model and rerun the program after eliminating each indicator respectively. Table 42 indicated the calculated values of each indicator before removing them of the model as follow:

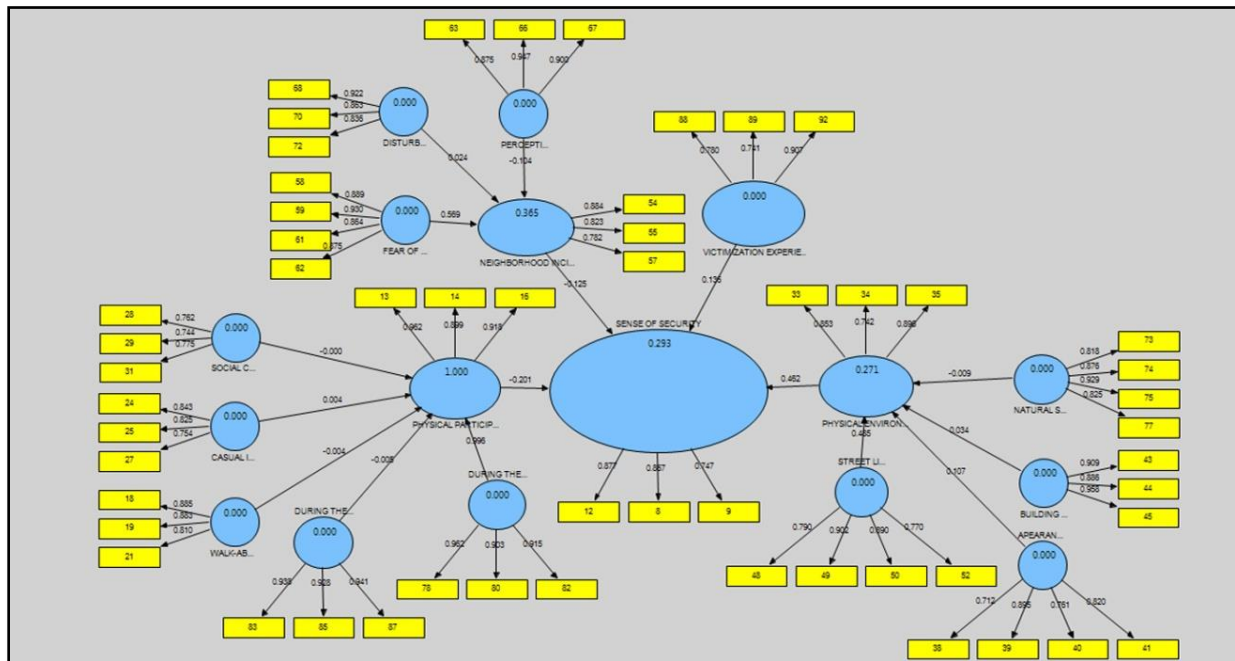
**Table 32:** Outer Loadings before Removing Indicators with Values Bellow 0.700

F.N	The Name of Construct	Question number	Outer Loadings	F.N	The Name of Construct	Question number	Outer Loadings
1	Sense Of Security	8	<b>0.786817</b>	10	Casual Interaction	23	<b>0.684979</b>
		9	<b>0.760490</b>			24	<b>0.860253</b>
		10	<b>0.650392</b>			25	<b>0.752047</b>

F.N	The Name of Construct	Question number	Outer Loadings	F.N	The Name of Construct	Question number	Outer Loadings
		11	<b>0.535991</b>		Between Neighbors	26	<b>-0.382914</b>
		12	<b>0.798790</b>			27	<b>0.759143</b>
2	During The Day	78	<b>0.957716</b>	11	Social Cohesion	28	<b>0.763930</b>
		79	<b>0.249513</b>			29	<b>0.765749</b>
		80	<b>0.896735</b>			30	<b>0.668317</b>
		81	<b>0.168174</b>			31	<b>0.750121</b>
		82	<b>0.914811</b>			32	<b>0.385581</b>
3	During The Night	83	<b>0.902760</b>	12	Appearance	38	<b>0.760317</b>
		84	<b>0.131450</b>			39	<b>0.846889</b>
		85	<b>0.926106</b>			40	<b>0.761697</b>
		86	<b>-0.595714</b>			41	<b>0.782823</b>
		87	<b>0.917095</b>			42	<b>0.639734</b>
4	Physical Participation	13	<b>0.958777</b>	13	Building Design	43	<b>-0.490587</b>
		14	<b>0.890756</b>			44	<b>-0.309755</b>
		15	<b>-0.248032</b>			45	<b>-0.367877</b>
		16	<b>0.920476</b>			46	<b>-0.080305</b>
		17	<b>0.162180</b>			47	<b>0.837905</b>
5	Neighborhood Incivilities	53	<b>0.718682</b>	14	Street Lighting	48	<b>0.732825</b>
		54	<b>0.847779</b>			49	<b>0.865313</b>
		55	<b>0.770831</b>			50	<b>0.872931</b>
		56	<b>0.481138</b>			51	<b>0.709740</b>
		57	<b>0.680971</b>			52	<b>0.593650</b>
6	Physical Environment	33	<b>0.713899</b>	15	Fear Of Crime	58	<b>0.879855</b>
		34	<b>0.816559</b>			59	<b>0.928491</b>
		35	<b>0.841776</b>			60	<b>0.022500</b>
		36	<b>0.740023</b>			61	<b>0.871442</b>
		37	<b>0.385097</b>			62	<b>0.880187</b>
7	Natural Surveillance	73	<b>0.747837</b>	16	Disturbance By Neighbors Or Youngsters	68	<b>0.849524</b>
		74	<b>0.923093</b>			69	<b>-0.281954</b>
		75	<b>0.849223</b>			70	<b>0.896369</b>
		76	<b>0.592696</b>			71	<b>-0.223312</b>
		77	<b>0.757530</b>			72	<b>0.871543</b>
8	Victimization Experience	88	<b>0.742611</b>	17	Perception Of Incivilities	63	<b>0.718450</b>
		89	<b>0.650468</b>			64	<b>0.122122</b>
		90	<b>0.347220</b>			65	<b>-0.435838</b>
		91	<b>0.127589</b>			66	<b>0.886556</b>
		92	<b>0.825342</b>			67	<b>0.730377</b>
9	Walk-Ability	18	<b>0.826696</b>				
		19	<b>0.855469</b>				
		20	<b>0.541778</b>				
		21	<b>0.757666</b>				
		22	<b>0.667465</b>				

As can be seen from Table 32 the indicators with the less values of 0.707 are specifies with the red color. Therefore, the indicators with less value comparing to other indicators' values were removed and the program was reran. This procedure was repeated until all indicators got the values of 0.707 or above. Thus, the main survey

questionnaire with the most relevant and appropriate questions examining the research's constructs was developed. Figure 3 and Table 33 illustrated the final result of research model and calculated outer loadings for existing indicators after removing inappropriate indicators as follow:



**Figure 3:** PLS Model Measurement after Removing Unacceptable Indicators

**Table 33:** Outer Loadings after Removing Indicators with Values Bellow 0.700

1	Sense Of Security	8	<b>F1<sub>1</sub></b>	<b>0.867242</b>
		9	<b>F1<sub>2</sub></b>	<b>0.746632</b>
		12	<b>F1<sub>3</sub></b>	<b>0.877005</b>
	During The Day	78	<b>F2<sub>1</sub></b>	<b>0.961708</b>
		80	<b>F2<sub>2</sub></b>	<b>0.902586</b>
		82	<b>F2<sub>3</sub></b>	<b>0.914875</b>
	During The Night	83	<b>F3<sub>1</sub></b>	<b>0.937593</b>

		85	<b>F3<sub>2</sub></b>	<b>0.927620</b>
		87	<b>F3<sub>3</sub></b>	<b>0.940925</b>
	Physical Participation	13	<b>F4<sub>1</sub></b>	<b>0.962002</b>
		14	<b>F4<sub>2</sub></b>	<b>0.899375</b>
		16	<b>F4<sub>3</sub></b>	<b>0.917632</b>
	Neighborhood Incivilities	54	<b>F5<sub>1</sub></b>	<b>0.883964</b>
		55	<b>F5<sub>2</sub></b>	<b>0.823299</b>
		57	<b>F5<sub>3</sub></b>	<b>0.782323</b>
	Physical Environment	33	<b>F6<sub>1</sub></b>	<b>0.852501</b>
		34	<b>F6<sub>2</sub></b>	<b>0.741942</b>
		35	<b>F6<sub>3</sub></b>	<b>0.896299</b>
	Natural Surveillance	73	<b>F7<sub>1</sub></b>	<b>0.818063</b>
		74	<b>F7<sub>2</sub></b>	<b>0.876156</b>
		75	<b>F7<sub>3</sub></b>	<b>0.928566</b>
		77	<b>F7<sub>4</sub></b>	<b>0.825352</b>
	Victimization Experience	88	<b>F8<sub>1</sub></b>	<b>0.780465</b>
		89	<b>F8<sub>2</sub></b>	<b>0.740792</b>
		92	<b>F8<sub>3</sub></b>	<b>0.907059</b>
	Walk-Ability	18	<b>F9<sub>1</sub></b>	<b>0.884579</b>
		19	<b>F9<sub>2</sub></b>	<b>0.883200</b>
		21	<b>F9<sub>3</sub></b>	<b>0.810442</b>
	Casual Interaction Between Neighbors	24	<b>F10<sub>1</sub></b>	<b>0.842556</b>
		25	<b>F10<sub>2</sub></b>	<b>0.824738</b>
		27	<b>F10<sub>3</sub></b>	<b>0.753972</b>
	Social Cohesion	28	<b>F11<sub>1</sub></b>	<b>0.761543</b>
		29	<b>F11<sub>2</sub></b>	<b>0.744394</b>
		31	<b>F11<sub>3</sub></b>	<b>0.774591</b>
	Appearance	38	<b>F12<sub>1</sub></b>	<b>0.712424</b>
		39	<b>F12<sub>2</sub></b>	<b>0.894942</b>
		40	<b>F12<sub>3</sub></b>	<b>0.761248</b>
		41	<b>F12<sub>4</sub></b>	<b>0.820383</b>
	Building Design	43	<b>F13<sub>1</sub></b>	<b>0.908987</b>
		44	<b>F13<sub>2</sub></b>	<b>0.886483</b>
		45	<b>F13<sub>3</sub></b>	<b>0.957784</b>
	Street Lighting	48	<b>F14<sub>1</sub></b>	<b>0.789665</b>
		49	<b>F14<sub>2</sub></b>	<b>0.901619</b>
		50	<b>F14<sub>3</sub></b>	<b>0.889916</b>
	Fear Of Crime	58	<b>F15<sub>1</sub></b>	<b>0.889170</b>
		59	<b>F15<sub>2</sub></b>	<b>0.930222</b>
		61	<b>F15<sub>3</sub></b>	<b>0.864400</b>
		62	<b>F15<sub>4</sub></b>	<b>0.875196</b>
	Disturbance By Neighbors Or Youngsters	68	<b>F16<sub>1</sub></b>	<b>0.921672</b>
		70	<b>F16<sub>2</sub></b>	<b>0.862903</b>
		72	<b>F16<sub>3</sub></b>	<b>0.836150</b>
	Perception Of Incivilities	63	<b>F17<sub>1</sub></b>	<b>0.875218</b>
		66	<b>F17<sub>2</sub></b>	<b>0.946916</b>
		67	<b>F17<sub>3</sub></b>	<b>0.900419</b>
		<b>11-10-81-79-86-84-15-17-56-53-36-37-76-91-90-20-22-26-32-30-42-47-46-51-60-69-71-65-64-23</b>		



30 indicators with less values of 0.707 were removed of the model. In the next section the cross-loading approach is undertaken to discover that whether the indicators are loaded equally on the other constructs as well as their theorized construct. To catch the cross-

validated items and due including them in the finalized data set, the loading must be larger on the intended construct than any other construct. Table 34 indicated the cross-loading result of pilot test of this research:

**Table 34: Cross-Loadings OF Latent Variables and Indicators 1**

	Appearance	Building Design	Casual Interaction...	Disturbance by Neighbors ...	During the Day	During the Night	Fear of Crime	Natural Surveillance	
<b>38</b>	<b>0.712424</b>	- 0.029644	0.453248	-0.034695	- 0.214331	- 0.064781	0.377996	0.270933	
<b>39</b>	<b>0.894942</b>	- 0.249666	0.601843	0.267240	- 0.181676	0.199160	0.274558	0.278575	
<b>40</b>	<b>0.761248</b>	- 0.162723	0.449221	0.055095	- 0.280390	0.117182	0.569818	0.383534	
<b>41</b>	<b>0.820383</b>	0.129392	0.431744	0.083969	0.080299	- 0.035196	0.125053	0.271560	
<b>43</b>	-0.248976	<b>0.908987</b>	-0.448456	-0.009713	0.841202	- 0.736966	-0.103472	-0.116024	
<b>44</b>	0.009992	<b>0.886483</b>	-0.325729	-0.002226	0.775401	- 0.682941	-0.049097	-0.123344	
<b>45</b>	-0.172906	<b>0.957784</b>	-0.398178	0.067410	0.762623	- 0.726224	-0.033162	-0.096460	
<b>24</b>	0.487640	- 0.421926	<b>0.842556</b>	-0.045148	- 0.457550	0.507677	0.233676	0.122596	
<b>25</b>	0.593240	- 0.321568	<b>0.824738</b>	-0.023514	- 0.383153	0.337868	0.275876	0.176233	
<b>27</b>	0.421561	- 0.245266	<b>0.753972</b>	-0.136362	- 0.238996	0.252640	-0.145576	0.023541	
<b>68</b>	0.236755	- 0.011178	0.043323	<b>0.921672</b>	0.024048	0.032277	0.397338	0.285056	
<b>70</b>	0.072230	0.068613	-0.180602	<b>0.862903</b>	0.054628	- 0.266717	0.221656	0.148823	
<b>72</b>	-0.083631	0.159894	-0.327382	<b>0.836150</b>	0.063310	- 0.230005	0.132487	0.239883	
<b>78</b>	-0.240153	0.843054	-0.497022	-0.027394	<b>0.961708</b>	- 0.775355	-0.208473	-0.275422	
<b>80</b>	-0.257225	0.716749	-0.485832	0.160778	<b>0.902586</b>	- 0.625675	-0.053052	-0.202718	
<b>82</b>	-0.054498	0.795941	-0.319261	-0.009611	<b>0.914875</b>	- 0.780899	-0.127914	0.008012	
<b>83</b>	0.171305	- 0.665278	0.468260	0.066604	- 0.696758	<b>0.937593</b>	-0.035207	-0.002917	
<b>85</b>	0.011809	- 0.744358	0.347097	-0.208068	- 0.732485	<b>0.927620</b>	-0.096961	0.055914	
<b>87</b>	0.167279	- 0.760388	0.525621	-0.153858	- 0.772757	<b>0.940925</b>	-0.066089	0.092811	
<b>58</b>	0.459840	- 0.128010	0.308838	0.337132	- 0.155644	0.038518	<b>0.889170</b>	0.305126	
<b>59</b>	0.464356	- 0.113370	0.225981	0.219261	- 0.175166	0.047206	<b>0.930222</b>	0.258660	
<b>61</b>	0.167882	0.082505	0.034069	0.254094	0.065161	0.162442	<b>0.864400</b>	0.215097	
<b>62</b>	0.237556	0.018485	0.057360	0.464141	- 0.071514	0.149070	<b>0.875196</b>	0.391025	
<b>73</b>	0.427369	- 0.324653	0.135334	0.166555	- 0.383608	0.308444	0.298145	<b>0.818063</b>	
<b>74</b>	0.214640	- 0.113485	0.147129	0.237337	- 0.149514	0.001041	0.374200	<b>0.876156</b>	
<b>75</b>	0.314433	0.045413	0.135189	0.258360	0.004959	- 0.076579	0.197338	<b>0.928566</b>	
<b>77</b>	0.452793	- 0.209789	0.042439	0.184813	- 0.296060	0.154572	0.372177	<b>0.825352</b>	
	<b>Neighborhood Incivilities</b>	<b>Perception of Incivilities</b>	<b>Physical Environment</b>	<b>Physical Participation</b>	<b>Sense of Security</b>	<b>Social Cohesion</b>	<b>Street Lighting</b>	<b>Victimization Experience</b>	<b>Walk-Ability</b>

54	<b>0.883964</b>	-0.322310	0.124477	-0.336747	0.172231	0.343156	0.312359	0.513645	0.264835
55	<b>0.823299</b>	-0.049982	0.109882	-0.111778	0.042290	0.339740	0.309896	0.357722	- 0.048415
57	<b>0.782323</b>	-0.101629	0.210037	0.012058	- 0.036892	0.296016	0.283318	0.503774	0.282397
63	-0.128601	<b>0.875218</b>	-0.066756	0.741590	- 0.216092	-0.277107	- 0.301218	-0.084009	- 0.351626
66	-0.247365	<b>0.946916</b>	-0.174464	0.843174	- 0.312936	-0.337177	- 0.377416	-0.223620	- 0.503044
67	-0.112608	<b>0.900419</b>	-0.145795	0.905746	- 0.260938	-0.283768	- 0.345972	0.011972	- 0.310649
33	0.113791	-0.062961	<b>0.852501</b>	-0.014679	0.445066	0.417386	0.511347	-0.002720	0.446443
34	0.126726	-0.361541	<b>0.741942</b>	-0.282300	0.423492	0.342069	0.368824	0.385920	0.516687
35	0.227404	0.035690	<b>0.896299</b>	0.100970	0.354873	0.447397	0.374545	0.408370	0.510886
13	-0.236559	0.846676	-0.125286	<b>0.962002</b>	- 0.229385	-0.425283	- 0.418827	-0.031806	- 0.459394
14	-0.135395	0.818613	0.036714	<b>0.899375</b>	- 0.061772	-0.247466	- 0.268499	-0.062466	- 0.196020
16	-0.116744	0.852714	-0.113819	<b>0.917632</b>	- 0.317934	-0.258683	- 0.212684	-0.088709	- 0.393080
8	0.026806	-0.300728	0.330379	-0.277416	<b>0.867242</b>	0.036502	0.129398	0.193707	0.199971
9	-0.004606	-0.202056	0.282620	-0.103996	<b>0.746632</b>	-0.037757	0.337579	0.123496	0.129940
12	0.123024	-0.244892	0.556578	-0.166083	<b>0.877005</b>	-0.055032	0.167179	0.202979	0.334314

<b>28</b>	0.363400	-0.162265	0.642361	-0.128954	0.027252	<b>0.761543</b>	0.540261	0.178694	0.470892
<b>29</b>	0.298586	-0.264270	0.651696	-0.223106	0.167426	<b>0.744394</b>	0.511122	0.071280	0.411191
<b>31</b>	0.272597	-0.288662	0.072595	-0.330535	- 0.162413	<b>0.774591</b>	0.190546	0.125895	0.110082
<b>48</b>	0.542081	-0.258417	0.332663	-0.241823	0.153359	0.368683	<b>0.789665</b>	0.415503	0.348477
<b>49</b>	0.340952	-0.321407	0.442225	-0.205187	0.222100	0.363224	<b>0.901619</b>	0.159166	0.437436
<b>50</b>	0.227503	-0.366594	0.358912	-0.304864	0.085006	0.385942	<b>0.889916</b>	0.168771	0.344219
<b>88</b>	0.333368	0.067797	0.177239	0.038891	0.113506	-0.070894	0.150643	<b>0.780465</b>	0.060023
<b>89</b>	0.344267	0.037291	0.220681	0.043666	0.115960	0.109405	0.306337	<b>0.740792</b>	0.274029
<b>92</b>	0.597482	-0.285676	0.290432	-0.146124	0.240877	0.233331	0.227781	<b>0.907059</b>	0.216861
<b>18</b>	0.235772	-0.493752	0.572692	-0.395516	0.316701	0.291845	0.300726	0.094486	<b>0.884579</b>
<b>19</b>	0.366498	-0.335107	0.477161	-0.319805	0.226683	0.488311	0.436742	0.341382	<b>0.883200</b>
<b>21</b>	-0.102154	-0.312139	0.443184	-0.237377	0.160761	0.116826	0.374306	0.185612	<b>0.810442</b>

As shown in Table 34, the cross-loading calculated for each construct is larger than other constructs in the same column and row. Next section focused on calculating the composite reliability

values and Cronbachs Alpha of the constructs. The Table 36 indicated calculated composite reliability values and Cronbachs Alpha for each construct as follow:

**Table 35:** Composite Reliabilities of Constructs in Model

Construct	Composite Reliability	Cronbachs Alpha
Appearance	0.876041	0.829204
Building Design	0.941555	0.912017
Casual Interaction Between Neighbors	0.849154	0.745211
Disturbance By Neighbors Or Youngsters	0.906696	0.878821
During The Day	0.948024	0.917409
During The Night	0.954531	0.928592
Fear Of Crime	0.938439	0.914862
Natural Surveillance	0.921012	0.898966
Neighborhood Incivilities	0.869681	0.776903
Perception Of Incivilities	0.933670	0.901864
Physical Environment	0.870927	0.776216
Physical Participation	0.947999	0.917409
Sense Of Security	0.870710	0.784824
Social Cohesion	0.804239	0.682442
Street Lighting	0.905025	0.861654
Victimization Experience	0.852612	0.763538
Walk-Ability	0.894901	0.828586

According to Chin (1998), acceptable composite reliability's values are those with equal or more than value of 0.8 and acceptable Cronbach's alpha values are those with equal or more values of 0.6.

Regarding Table 35, all variables were met the recommended composite reliability (0.8 and above) and Cronbach's alpha (0.6 and above) values which reveals the reliability and validity of the

research model. The final section of examining the reliability of survey questionnaire was to calculate the discriminant validity. Fornell and Larcker (1981) highlighted that the average of extracted variance for each construct should be more than the square of the correlation among the construct and all other constructs to examine the discriminant validity. Moreover, it is equally significant that the

correlation among the constructs be lower than the square root of the extracted average variance. Due to simplifying the tabulation of discriminant validity, each construct is identified by a code or number in Table 36 and the average variance extracted (AVE) of each construct is identified in Table 37 as follow:

**Table 36:** The Identified Codes or Numbers for Each Construct

Constructs	Code or Number	Constructs	Code or Number
Appearance	<b>1</b>	Perception Of Incivilities	<b>10</b>
Building Design	<b>2</b>	Physical Environment	<b>11</b>
Casual Interaction Between Neighbors	<b>3</b>	Physical Participation	<b>12</b>
Disturbance By Neighbors Or Youngsters	<b>4</b>	Sense Of Security	<b>13</b>
During The Day	<b>5</b>	Social Cohesion	<b>14</b>
During The Night	<b>6</b>	Street Lighting	<b>15</b>
Fear Of Crime	<b>7</b>	Victimization Experience	<b>16</b>
Natural Surveillance	<b>8</b>	Walk-Ability	<b>17</b>
Neighborhood Incivilities	<b>9</b>		

**Table 37:** Average Variance Extracted (AVE)

Constructs	AVE	AVE's Square
Appearance	0.640249	0.800
Building Design	0.843153	0.918
Casual Interaction Between Neighbors	0.652855	0.807
Disturbance By Neighbors Or Youngsters	0.764409	0.874
During The Day	0.858847	0.926
During The Night	0.874966	0.935
Fear Of Crime	0.792273	0.890
Natural Surveillance	0.745079	0.863
Neighborhood Incivilities	0.690414	0.830
Perception Of Incivilities	0.824470	0.908
Physical Environment	0.693529	0.832
Physical Participation	0.858790	0.926
Sense Of Security	0.692902	0.832
Social Cohesion	0.578020	0.760
Street Lighting	0.705352	0.839
Victimization Experience	0.660218	0.812
Walk-Ability	0.739779	0.860

After calculating the average variance extracted (AVE) and resulting that all of the values are more than recommended value of 0.50 by Fornell and Larcker (1981), discriminant validity was developed. Due to simplify the

tabulation of discriminant validity, the latest three decimal digits of the discriminant validity's values are removed. Then Table 38 is presented the model's discriminant validity as follow:

**Table 38:** Discriminant Validity for Model

Research Constructs' Codes or Numbers																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

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<b>1</b>	<b>0.800</b>																
<b>2</b>	- 0.161	<b>0.918</b>															
<b>3</b>	0.625	- 0.425	<b>0.807</b>														
<b>4</b>	0.174	0.032	- 0.070	<b>0.874</b>													
<b>5</b>	- 0.198	0.848	- 0.468	0.042	<b>0.926</b>												
<b>6</b>	0.124	- 0.774	0.479	- 0.109	- 0.786	<b>0.935</b>											
<b>7</b>	0.403	- 0.060	0.201	0.352	- 0.141	- 0.071	<b>0.890</b>										
<b>8</b>	0.364	- 0.116	0.146	0.256	- 0.170	0.053	0.328	<b>0.863</b>									
<b>9</b>	0.604	- 0.262	0.196	0.235	- 0.177	0.109	0.594	0.483	<b>0.830</b>								
<b>10</b>	- 0.245	0.828	- 0.476	- 0.102	0.905	- 0.728	- 0.166	- 0.185	- 0.201	<b>0.908</b>							
<b>11</b>	0.284	- 0.116	0.372	0.542	- 0.074	0.010	0.418	0.326	0.183	- 0.152	<b>0.832</b>						
<b>12</b>	- 0.196	0.849	- 0.467	0.040	0.999	- 0.787	- 0.142	- 0.168	- 0.177	0.905	- 0.076	<b>0.926</b>					
<b>13</b>	- 0.120	- 0.156	0.073	0.340	- 0.220	0.112	0.312	0.295	0.072	- 0.300	0.494	- 0.222	<b>0.832</b>				
<b>14</b>	0.554	- 0.383	0.484	0.346	- 0.337	0.353	0.328	0.343	0.391	- 0.336	0.484	- 0.337	- 0.024	<b>0.760</b>			
<b>15</b>	0.384	- 0.277	0.436	0.348	- 0.325	0.327	0.400	0.619	0.362	- 0.381	0.511	- 0.325	0.232	0.474	<b>0.839</b>		



<b>16</b>	0.386	0.153	0.005	0.320	- 0.065	- 0.173	0.743	0.292	0.564	- 0.144	0.294	- 0.065	0.214	0.154	0.273	<b>0.812</b>	
<b>17</b>	0.419	- 0.342	0.416	0.390	- 0.379	0.276	0.416	0.397	0.225	- 0.456	0.587	- 0.382	0.286	0.362	0.421	0.231	<b>0.860</b>

According to Table 38, all the calculated values of square root of the average variance extracted (illustrated in bold diagonal) are more than the correlations among constructs. It means that the developed model passed the AVE measurement validity.

### 3.7 Revising the survey instrument and deploying the survey questionnaire

As final step of developing the survey questionnaire to measure

## 4. Conclusion

This research aimed to provide a guideline for examining sense of security in urban neighborhoods of Johor Bahru, Malaysia. Moreover, providing an instrument measurement due enhancing the sense of security evaluation was the other concern of this research. As mentioned before, we followed eight steps to develop measurement instrument and each of which were well explained in aforementioned sections. Undertaking the Partial Least Squares (PLS) approach helped this research to get the

sense of security in urban neighborhoods of Johor Bahru, Malaysia, the final questions with acceptable values mentioned before are taken to the experts in Architectural and Urban Design experts to get the final revisions and recommendations. When the final recommendation from the experts was employed, the final survey was designed and developed.

reliability and validity of developed survey questionnaire. As final, we believe that the most appropriate and accurate measurement instrument is developed in this research which can benefit urban developer and managers to estimate the sense of security in urban neighborhoods. The final version of developed questionnaire survey is presented as follow:

**Table 39:** The Final Questions of Questionnaire Survey

<b>Sense Of Security</b>	
<b>F1<sub>1</sub></b>	How secure is it where you live?
<b>F1<sub>2</sub></b>	How likely is it that you avoid going out of house because you feel unsecure there?
<b>F1<sub>3</sub></b>	How satisfied you are from security of your neighbourhood?
<b>During The Day</b>	
<b>F2<sub>1</sub></b>	How secure do you feel in your neighborhood during the day?
<b>F2<sub>2</sub></b>	How do you describe the problem with feeling insecure during the day in your neighborhood?
<b>F2<sub>3</sub></b>	Please specify the importance of the problem with going out in day in your neighborhood?
<b>During The Night</b>	
<b>F3<sub>1</sub></b>	How secure do you feel in your neighborhood during the night?
<b>F3<sub>2</sub></b>	How do you describe the problem with feeling insecure during the night in your neighborhood?
<b>F3<sub>3</sub></b>	Do you have experience to feel insecure during a night in your neighborhood?
<b>Physical Participation</b>	
<b>F4<sub>1</sub></b>	How likely it is for you to go for physical participation like going to public ceremonies in your neighbourhood?
<b>F4<sub>2</sub></b>	According to the current situation of your neighborhood, please specify how interesting is it for you to have physical participation like like going to public ceremonies in your neighbourhood:
<b>F4<sub>3</sub></b>	Please specify your agreement with; “physical participation like going to public ceremonies in my neighbourhood is common for me”
<b>Neighborhood Incivilities</b>	
<b>F5<sub>1</sub></b>	Do you have experience to perceive incivilities in your neighborhood:
<b>F5<sub>2</sub></b>	How do you describe the problem with incivilities in your neighborhood?
<b>F5<sub>3</sub></b>	Please specify that how likely you see incivilities in your neighborhood?
<b>Physical Environment</b>	
<b>F6<sub>1</sub></b>	How satisfied you are from physical environment of the streets of your neighbourhood?
<b>F6<sub>2</sub></b>	Please specify your agreement with “The physical environment of this neighbourhood and the way it is desighned is a motivation for me to go out and hang around”:
<b>F6<sub>3</sub></b>	In your oponion, how is the quality of the environmental desighn in your neighbourhood?
<b>Natural Surveillance</b>	

<b>F7<sub>1</sub></b>	Please specify the amount of your satisfaction with Garden maintenance, street maintenance and general cleanliness (none or almost no rubbish, some rubbish or lots of rubbish) in your neighborhood:
<b>F7<sub>2</sub></b>	
<b>F7<sub>3</sub></b>	Please specify that how worry you are of Garden maintenance, street maintenance and general cleanliness (none or almost no rubbish, some rubbish or lots of rubbish) in your neighborhood?
<b>F7<sub>4</sub></b>	Please specify the importance of the problem with Garden maintenance, street maintenance and general cleanliness (none or almost no rubbish, some rubbish or lots of rubbish) in your neighborhood? Please specify your agreement with “the quality of garden maintenance, street maintenance and general cleanliness is good in my neighborhood”:
<b>Walk-Ability</b>	
<b>F9<sub>1</sub></b>	According to the security of your neighborhood, how likely it is for you to go for walking there?
<b>F9<sub>2</sub></b>	
<b>F9<sub>3</sub></b>	How secure do you feel while you are walking alone in your neighborhood? How worry you are that something frightening happen when you are walking in your neighbourhood?
<b>Casual Interaction Between Neighbors</b>	
<b>F10<sub>1</sub></b>	How favorable is it for you to interact or have connection with your neighbours?
<b>F10<sub>2</sub></b>	How likely it is for you to interact or have connection with your neighbours?
<b>F10<sub>3</sub></b>	Please specify your agreement with; “my nabours are interested to interact or have connection with each other”
<b>Victimization Experience</b>	
	Options: <ul style="list-style-type: none"> <li>• Being the victim of a burglary</li> <li>• Having items stolen from outside their home</li> <li>• Being the victim of a robbery</li> <li>• Being the victim of an assault</li> <li>• Having people involve their family members in selling drugs</li> <li>• Being attacked or physically injured</li> </ul>
<b>F8<sub>1</sub></b>	Please specify how worry you are of one or more above mentioned options in your neighbourhood:
<b>F8<sub>2</sub></b>	Please specify the importance of the problem with one or more above options:
<b>F8<sub>3</sub></b>	Do you have experience yourself or to see one or more above mentioned options in your neighbourhood:

<b>Social Cohesion</b>	
<b>F11<sub>1</sub></b>	Please specify your agreement with “People around here are willing to help their neighbors”:
<b>F11<sub>2</sub></b>	
<b>F11<sub>3</sub></b>	Please specify your agreement with “This is a friendly neighborhood”: Please specify your agreement with “People in this neighborhood can be trusted”:
<b>Appearance</b>	
<b>F12<sub>1</sub></b>	Do you have experience to see one or more of physical disorders such as: “beer/liquor bottles/cans, cigarette/ cigar butts/packages, garbage, litter or broken glass, abandoned cars, graffiti or broken windows” on the streets of your neighborhoods?
<b>F12<sub>2</sub></b>	Please specify the amount of your satisfaction with your neighborhoods according to your perceive of “beer/liquor bottles/cans, cigarette/ cigar butts/packages, garbage, litter or broken glass, abandoned cars, graffiti or broken windows” on the streets of your neighborhoods?
<b>F12<sub>3</sub></b>	How do you describe the problem with “beer/liquor bottles/cans, cigarette/ cigar butts/packages, garbage, litter or broken glass, abandoned cars, graffiti or broken windows” on the streets of your neighborhoods?
<b>Building Design</b>	
<b>F13<sub>1</sub></b>	Please specify the amount of your satisfaction with buildings/estates’ design and placed bushes and shrubbery in your neighborhoods?
<b>F13<sub>2</sub></b>	How do you describe the problem with badly designed buildings/estates' and `badly placed bushes and shrubbery in your neighborhoods?
<b>F13<sub>3</sub></b>	Please specify the importance of the problem with badly designed buildings/estates' and `badly placed bushes and shrubbery in your neighborhoods?
<b>Street Lighting</b>	
<b>F14<sub>1</sub></b>	For walking at night, would you describe the street lighting in your neighborhoods:
<b>F14<sub>2</sub></b>	How worry you are from lack of street lighting in your neighborhoods?
<b>F14<sub>3</sub></b>	Please specify the importance of the problem with the street lighting in your neighborhoods?
<b>Fear Of Crime</b>	
<b>F15<sub>1</sub></b>	Please specify that how likely you feel that someone break into your home while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?
<b>F15<sub>2</sub></b>	How do you describe the problem with someone break into your home while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?
<b>F15<sub>3</sub></b>	
<b>F15<sub>4</sub></b>	Do you have experience of feeling that someone break into your home while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?

Please specify that how worry you are that someone break into your home while no one is here, steal things that you might leave outside your home overnight, try to rob you or steal something from you or attack you while you are outside of your house?

### **Disturbance By Neighbors Or Youngsters**

**F16<sub>1</sub>** Please specify that how likely you feel that you disturb by neighbors or youngsters in your neighborhoods?

**F16<sub>2</sub>**

**F16<sub>3</sub>** Do you have experience to be disturbed by neighbors or youngsters in your neighborhoods?

Please specify the importance of the problem with being disturbed by neighbors or youngsters in your neighborhoods?

### **Perception Of Incivilities**

**F17<sub>1</sub>** Please specify that how likely it is for you to perceive “dirty or unkempt buildings and lots, vacant or abandoned lots, neighbors who make too much noise, homeless loitering, public drug or alcohol use, graffiti or truancy, that is kids not being in school when they should be” in your neighborhoods?

**F17<sub>2</sub>** Please specify that how worry you are about “dirty or unkempt buildings and lots, vacant or abandoned lots, neighbors who make too much noise, homeless loitering, public drug or alcohol use, graffiti or truancy, that is kids not being in school when they should be” in your neighborhoods?

**F17<sub>3</sub>** Do you have experience to see “dirty or unkempt buildings and lots, vacant or abandoned lots, neighbors who make too much noise, homeless loitering, public drug or alcohol use, graffiti or truancy, that is kids not being in school when they should be” in your neighborhoods?

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