



KINGDOM OF BAHRAIN Information & eGovernment Authority Satisfaction Insight Review



Strategic Decision Support Studies (SDSS) Research Group
College of IT, University of Bahrain

10 March 2016

Final Results

AGENDA

- **Review Objectives**
- **Methodology and Background**
- **Capturing the Voice of Customer**
- **Aggregate Results**

RESEARCH OBJECTIVE

This Review offers a concentrated focus on stakeholders of e-Government services particular aspects of their experience. Improvement opportunities are identified and recommendations are made to help guide enhancement efforts.

Past Objectives

The previous Satisfaction Insight review had focused on:

- > Providing an overview of the current situation of e-Government services in terms of **usage, interaction, awareness, impact and satisfaction**.
- > Measuring the **Customer Satisfaction Index (CSI)** for the three stakeholders Individual , business, and government for the different service categories

Current review Focus Areas

- > Measure the Customer Satisfaction Index for e-Government services at service category level for the three different stakeholders, individual, Business and Government
- > Provide an overview of **Customer satisfaction** survey of most 15-25 relevant services.

BACKGROUND AND METHODOLOGY

Measuring the Experience

The **Strategic Decision Support Studies (SDSS) research group** at UOB used their own developed Bahrain Customer Satisfaction index (BHCSI) that is based on two well-recognized international standard CSI:

American Customer Satisfaction Index (ACSI)

- It is a cause and effect relationships that was created in the United State and has been the leading national indicator of Customer Satisfaction since 1994.
- It links the Customer Satisfaction to financial performance but then was later developed to reflect the public sector's nature.
- It has been implemented by many countries such as Korea, Japan , Singapore, UK New Zealand, Indonesia, Taiwan, Barbados, Austria, Jordan, etc.

➤ European Customer Satisfaction Index (ECSI)

- The ECSI is derived from successful applications of the Swedish and American national customer satisfaction indices, designed to improve the measurement of customer satisfaction, and has been validated in such service industries as telecommunications, postal services and banks.
- Many other factors are included in addition to the ACSI's factors such as image and customer complaints.

BACKGROUND AND METHODOLOGY

Measuring the Experience

SDSR team uses the science of the ACSI and best scientific approaches to the measurement and analysis of the customer experience using some professional scientific analytical tools.

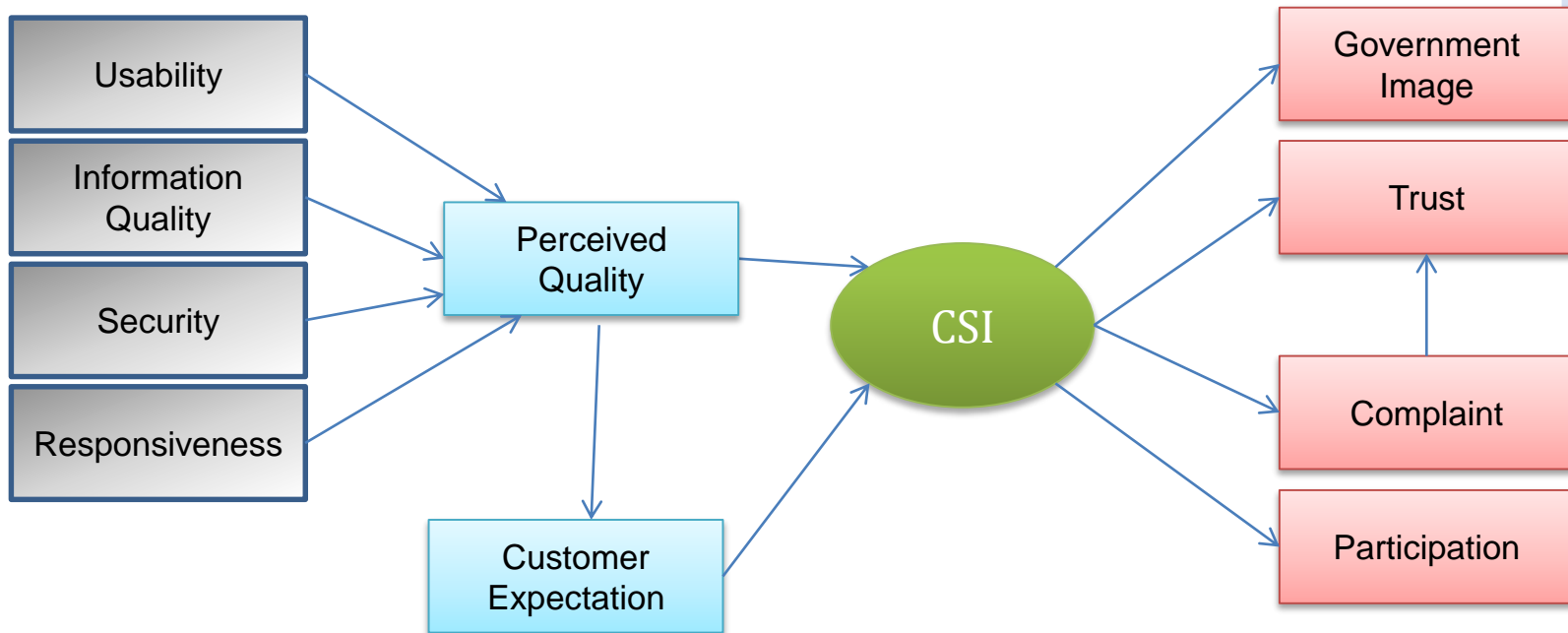
This analysis allows to present the outcomes based on **Cause and Effect** Relationships:

- > **Cause** represents the aspects of the experience such as features in the systems in terms for example Usability, Information Quality, Security, responsiveness. as
- > **Effect** presents the future Behaviors as consequences of Customer Satisfaction such as trust, Participation, etc.



BACKGROUND AND METHODOLOGY

Bahrain Customer Satisfaction Index (**BHCSI**)



The **BHCSI** model was developed by SDSS research group to measure the customer (satisfaction of a public not private sector. Therefore,

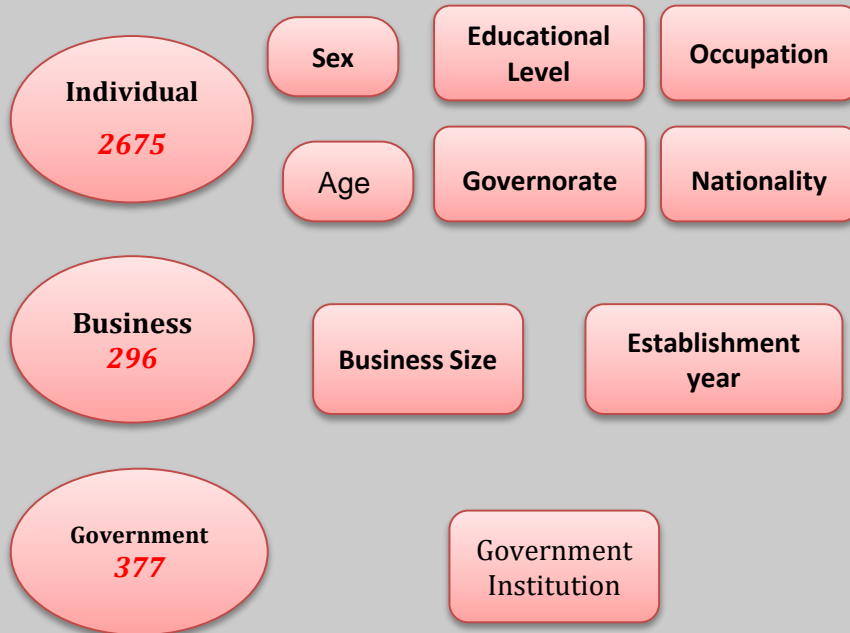
Perceived value and **Customer Expectation** are **causes** for Customer Satisfaction

Government image, Public Participation, Trust and Complaints are measured as major consequences (**effect**) for the CSI

BACKGROUND AND METHODOLOGY

Survey Component

Part 1: Demographic Information and Perceived benefit from e-Government services usage



Standardized questions that measure the **perceived benefit** from using e-Government services that include the saving of time, effort, cost, effectiveness, etc.

Part 2: Model Questions



Standardized questions that measure the aspects of the experience you control (**Usability, Security, Information Quality, Responsiveness**) overall customer satisfaction, and future behaviors of customers (Government Image, Trust, Participation)

- Helps to diagnose and prioritize areas for improvement to leverage satisfaction level.
- Helps to benchmark your performance against peers, competitors, best-in-class, and yourself over time.

Collection Strategy

Qualtrics & Quality Control

CSI and RS Data Collection Strategy

1. Employed and trained 11 data collectors.
2. Only electronic versions were used this time to collect data from random respondents in various governorates.
3. Qualtrics web based survey system was used; a professional high end survey service provider with sophisticated data verification tools.
4. Respondents were asked to fill both surveys (CSI + RS) if possible, else one only.
5. iGA's limited mailing list was used for both Business and Government stakeholders.
6. Collectors used their own personal contacts to target all stake holders.
7. Collectors used social media to increase the stakeholders' participation.
8. **For RS specific:** youth defined as single and between age of 15 - 25 (as defined by the United Nation)

Capturing the Voice for Customer:

About Qualtrics



An online survey has been developed using Qualtrics web based survey system

- Qualtrics web based survey system is a professional high end survey service provider with sophisticated data verification tools.
- It is a generalized survey service permitting the creation of survey instruments, distribution of the surveys, data storage and analysis.
- It meets stringent information security requirements not found in most free online survey tools.
- The collection management is very much dynamic and efficient. See following slides for detail.
- Qualtrics also has important quality control features, such as preventing multiple submissions from a single survey participant and add password protection.

Capturing the Voice for Customer: **Sample**

See Appendix A for full surveys



62.209.10.145

February 04, 2016 3:53 PM

00:03:15



Q7. To what extent you are agree with the following statements on the benefits of eServices provided by e-government authority, (1-Strongly Disagree - 5 Strongly Agree):

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The eServices reduce time taken to execute the transactions	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The eServices reduce effort to execute the transactions	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The eServices save transaction cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
The eServices are relevant to my needs	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The eServices are providing what I'm looking for	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
The eServices are allowing me to accomplish what I want	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

CSI Stakeholders & Sample size and details

CSI (GOVERNMENT)							
No	data collector	Number of Responses	Completed	# dropped			Final Total
				incompleted	Outside Bahrain	< 2	
1	DC01	11	2	9	0	0	2
2	DC02	112	112	0	60	0	52
3	DC03	7	7	0	0	0	7
4	DC04	145	144	1	1	0	143
5	DC05	0	0	0	0	0	0
6	DC06	0	0	0	0	0	0
7	DC07	24	23	1	0	0	23
8	DC08	2	2	0	0	0	2
9	DC09	1	0	1	0	0	0
10	DC10	0	0	0	0	0	0
11	DC11	10	10	0	0	0	10
	Other	20	20	0	0	0	20
	Total	332	320	12	61	0	259

CSI (BUSINESS)							
No	data collector	Number of Responses	Completed	# dropped			Final Total
				incompleted	Outside Bahrain	< 2	
1	DC01	17	3	13		0	4
2	DC02	35	34	1	0	0	34
3	DC03	107	107	0	0	0	107
4	DC04	26	23	3	0	0	23
5	DC05	7	6	1	0	0	6
6	DC06	2	1	1	0	0	1
7	DC07	49	47	2	0	0	47
8	DC08	49	46	3	0	0	46
9	DC09	11	5	6	0	0	5
10	DC10	2	0	2	0	0	0
11	DC11	10	10	0	0	0	10
	Others	10	10	0	0	0	10
	Total	325	293	32	0	0	293

CSI (INDIVIDUAL)							
No	data collector	Number of Responses	Completed	# dropped			Final Total
				incompleted	Outside Bahrain	< 2	
1	DC01	64	23	41	0	0	23
2	DC02	464	414	50	0	5	409
3	DC03	161	117	44	0	8	109
4	DC04	584	531	53	0	6	525
5	DC05	215	203	12	15	6	182
6	DC06	541	490	51	1	40	449
7	DC07	596	553	43	0	78	475
8	DC08	418	289	129	6	13	270
9	DC09	91	42	49	0	0	42
10	DC10	176	130	46	0	0	130
11	DC11	91	69	22	0	8	61
	Total	3401	2861	540	22	164	2675



Capturing the Voice for Customer: Quality Control Mechanism






In this survey, using the features of Qualtrics, UOB team has implemented the following actions to reduce the number of errors and increase the quality of the collected data. These were:

1. Removed all incomplete responses.
2. Removed all responses conducted outside Bahrain.
3. Removed all responses with odd durations.

See following slides for details

1. Removed all incomplete responses (CSI)

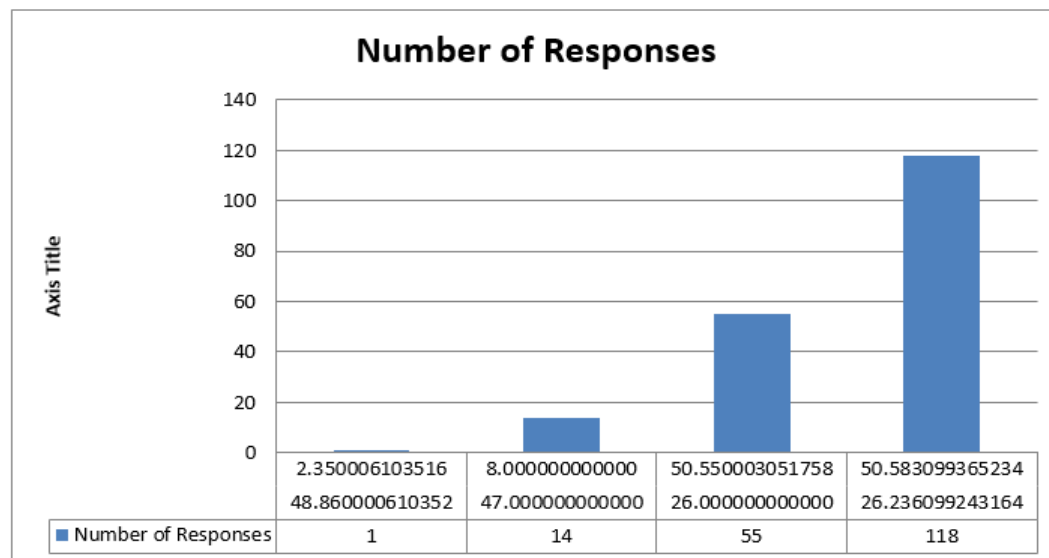
	Status	Responses	Complete	Partial	Completion Rate
★  CSI - (Individuals) Last Modified: Jan 21, 2016 10:01 AM	Inactive	2.8k	2.8k	566	83%
★  CSI - (Business) - DC Last Modified: Jan 13, 2016 2:30 PM	Inactive	283	283	32	90%
★  CSI - (Government) - DC Last Modified: Mar 8, 2016 8:50 AM	Inactive	396	396	31	93%

2a. Remove all responses conducted outside Bahrain Coordinates (26.0275° N, 50.5500° E)

- Qualtrics records Coordinates for each responder (latitude and longitude) all responses with latitude and longitude outside the geographical coordinates of Bahrain has been removed.

Data Collector ID: DC05

	Location Latitude	Location Longitude	Number of Responses	Response ID (Sample)	Governorate
1	48.860000610352	2.350006103516	1	R_3qrO7hIXPvRT3YT	Paris
2	47.000000000000	8.000000000000	14	R_XXOK5I39nkD35lf	Switzerland
3	26.000000000000	50.550003051758	55	R_sTmwgcEdrq6hV6x	South Governorate
4	26.236099243164	50.583099365234	118	R_7ZJLE8biURSHQNX	Capital Governorate
			188		



2b. Remove all responses conducted outside Bahrain Coordinates (26.0275° N, 50.5500° E)

Location Data

Location: [\(26.50550003051758\)](#)

Source: GeolP Estimation



Location Data

Location: [\(47.8\)](#)

Source: GeolP Estimation



Location Data

Location: [\(48.860000610352, 2.3500061035156\)](#)

Source: GeolP Estimation

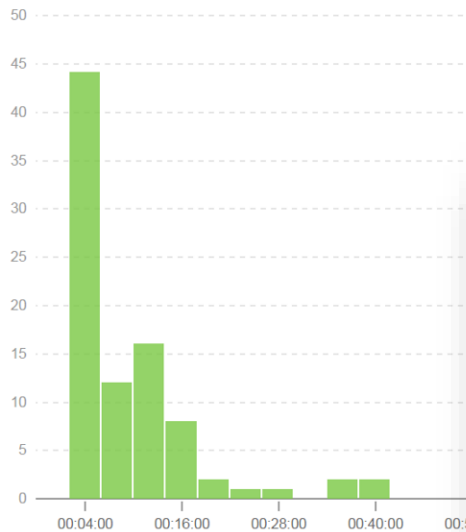


LocationLatitude	LocationLongitude	Lc
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
31.5496978800	74.3435974100	
26.0000000000	50.5500030500	
26.2360992400	50.5830993700	
26.0000000000	50.5500030500	
31.5496978800	74.3435974100	
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
26.2360992400	50.5830993700	
26.0000000000	50.5500030500	
26.0000000000	50.5500030500	
26.2360992400	50.5830993700	
31.5496978800	74.3435974100	
26.2360992400	50.5830993700	
26.0000000000	50.5500030500	
26.0000000000	50.5500030500	
31.5496978800	74.3435974100	
26.2360992400	50.5830993700	
26.0000000000	50.5500030500	

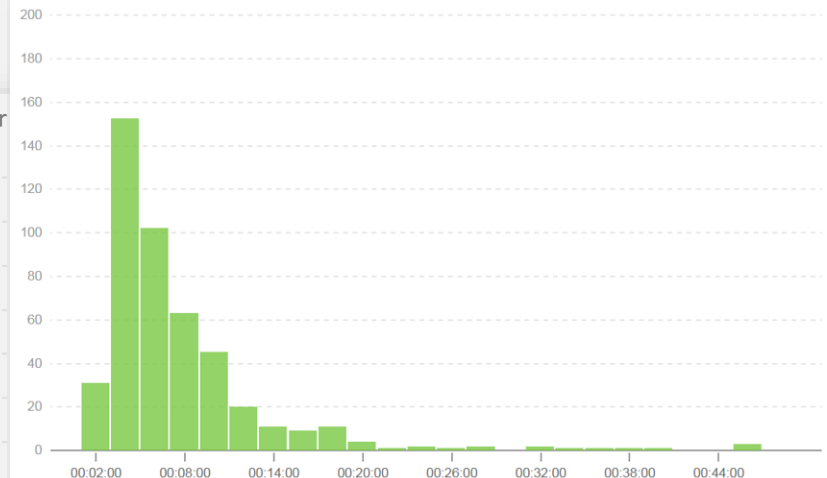
3. Remove all responses with odd durations

Qualtrics record response duration for each responder. The Average of responses duration has been calculated for all responses and the average of responses duration has been calculated for each data collectors and all odd durations have been removed “< 2 minutes for CSI”

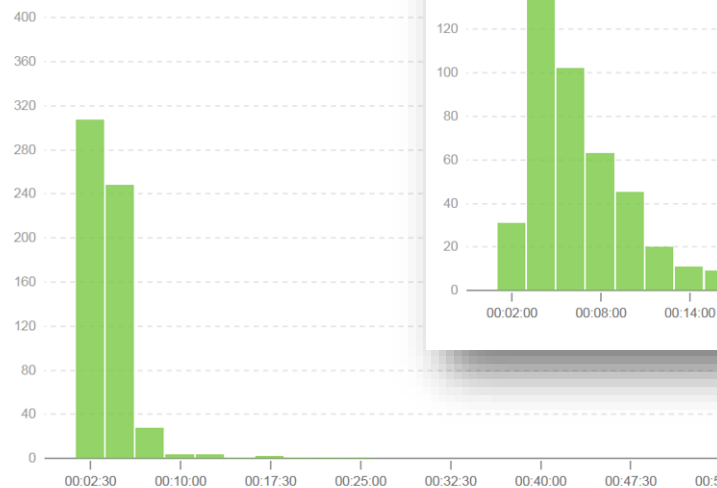
Survey Durations for Data Collector DC11 (CSI Individuals)



Survey Durations for Data Collector DC02 (CSI Individuals)



Survey Durations for Data Collector



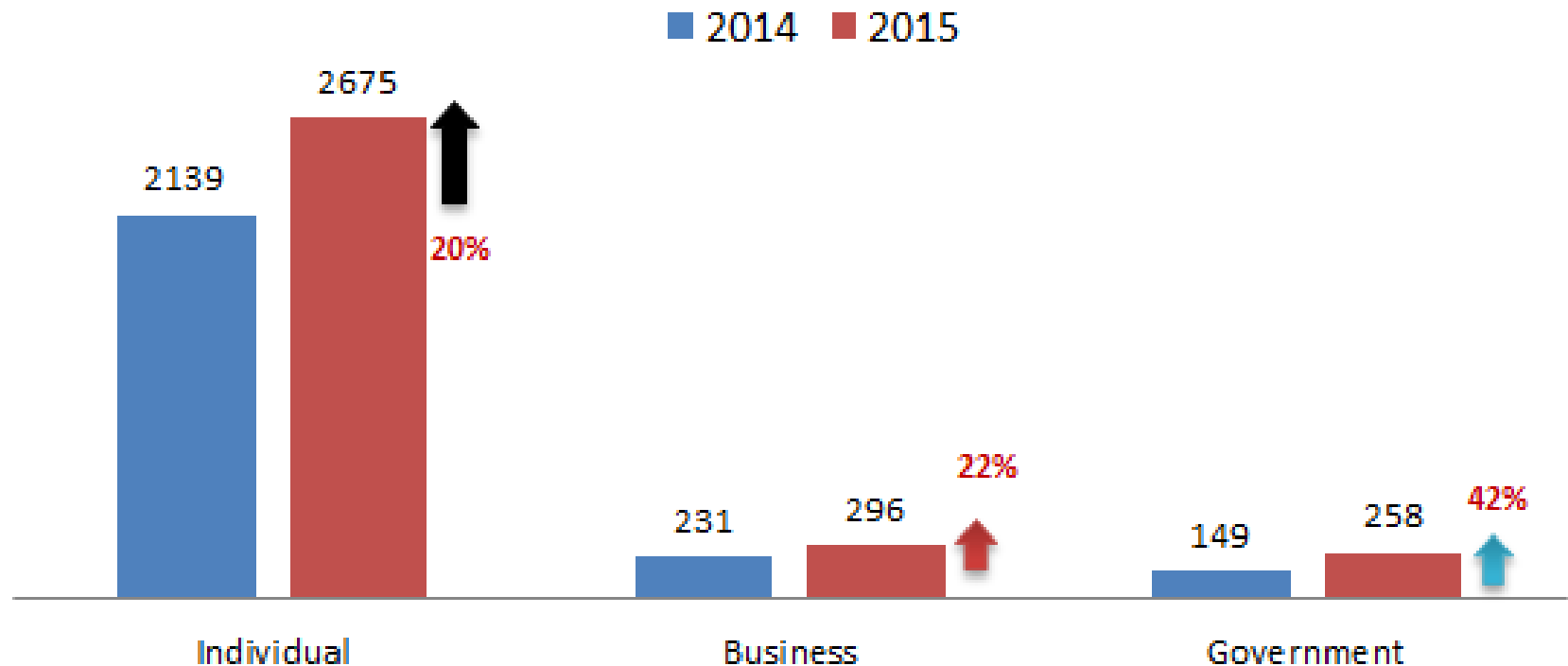
DESCRIPTIVE ANALYSIS

- This analysis has been used to describe the set of data in terms of:
 1. **Demographics**
 - Individual (Sex, Age, Nationality, Occupation, Educational level and Governorate)
 - Business (Sex, Sector, Size and years since established)
 - Government (Sex, Name of entity)
 2. **Perceived Benefits** of e-services
 3. **Usage** of e-services categories
 4. **Customer satisfaction** percentage/category
 - Percentages of satisfaction causes (Perceived Quality and Customer expectation)
 - Percentages of satisfaction effects (Government Image, Trust, Complaint and Public Participation)

DEMOGRAPHICS INFORMATION

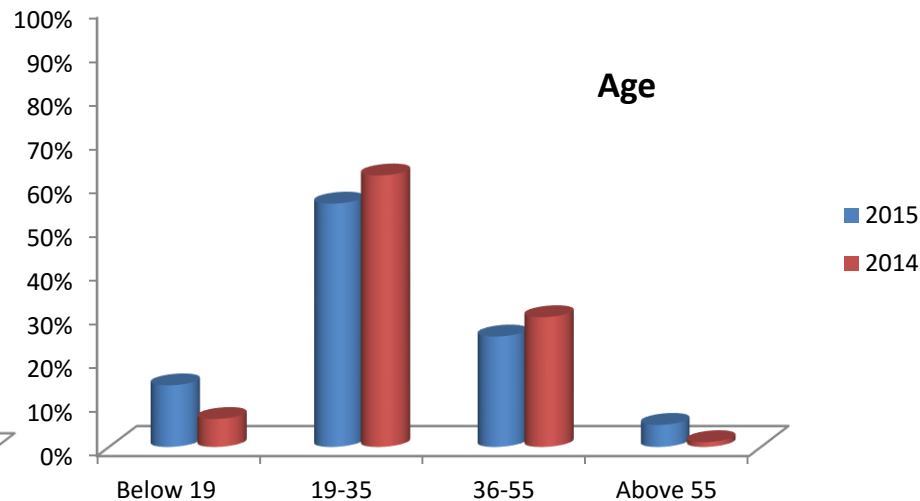
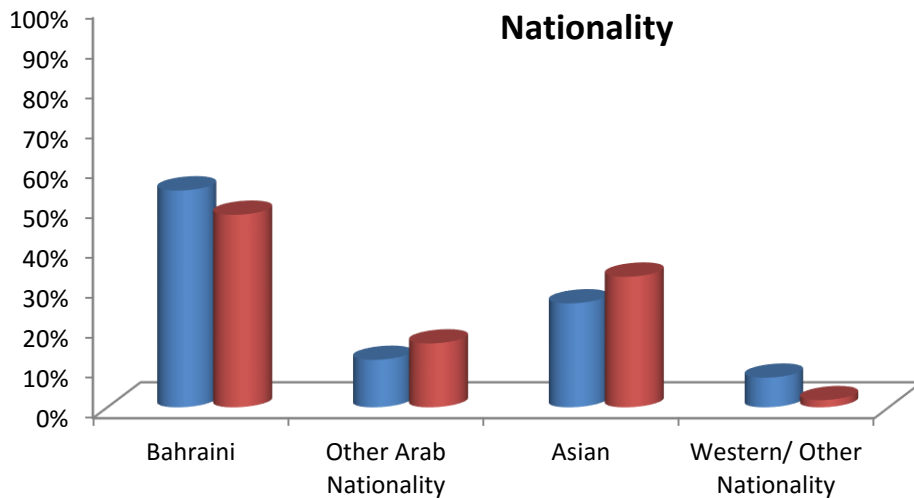
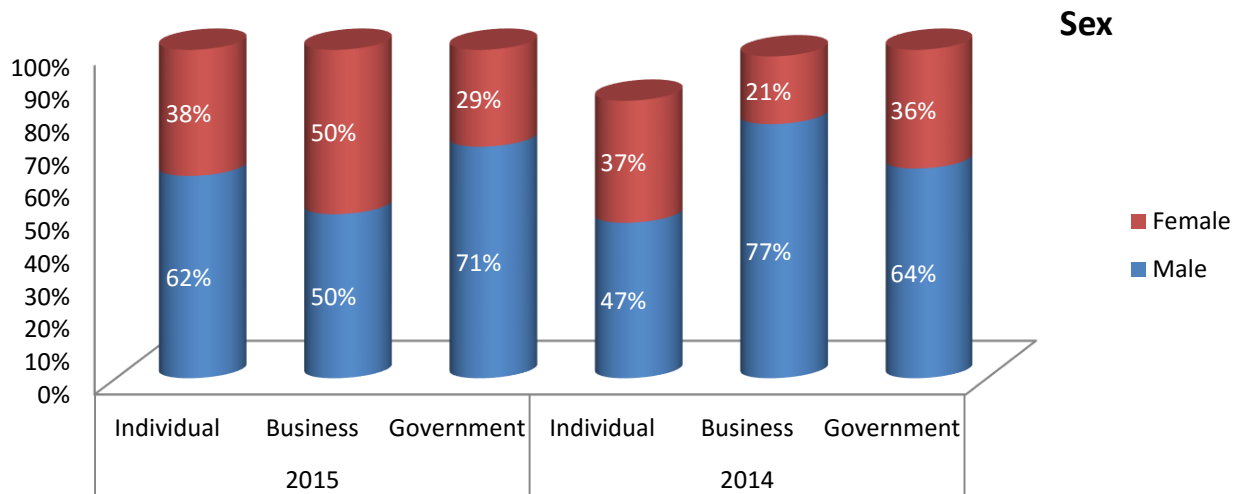
How participants differed in 2015?

Participants



DEMOGRAPHICS INFORMATION

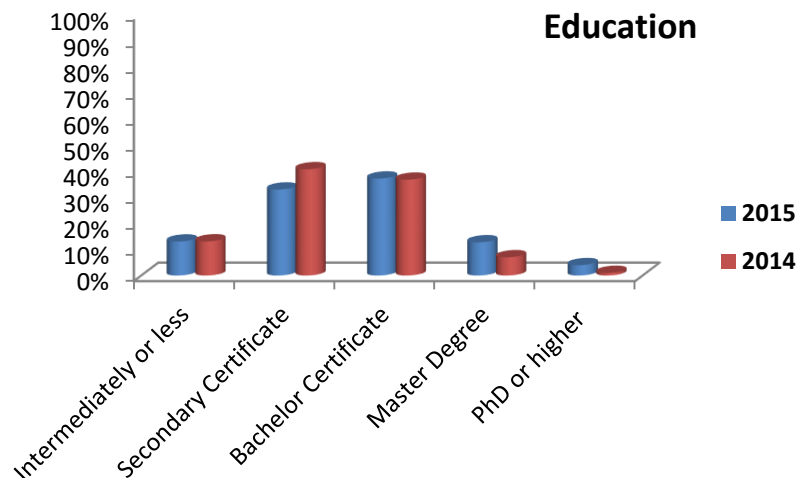
How participants differed in 2015?



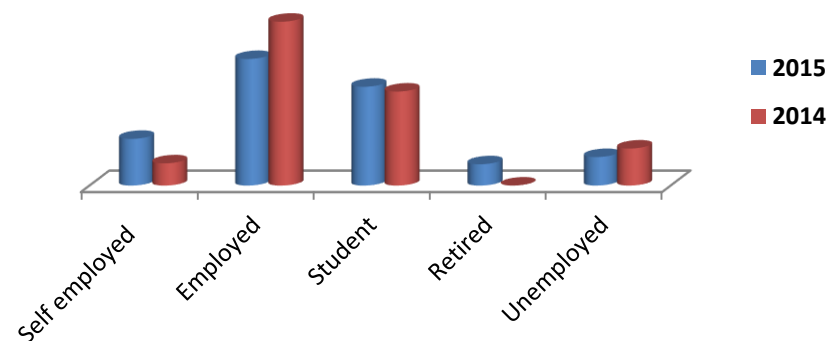
DEMOGRAPHICS - INDIVIDUAL

How participants differed in 2015?

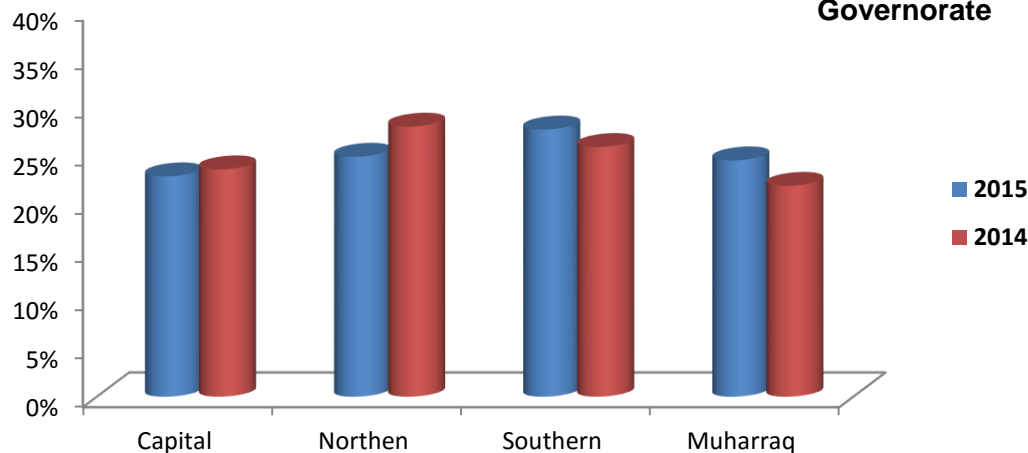
Education



Occupation



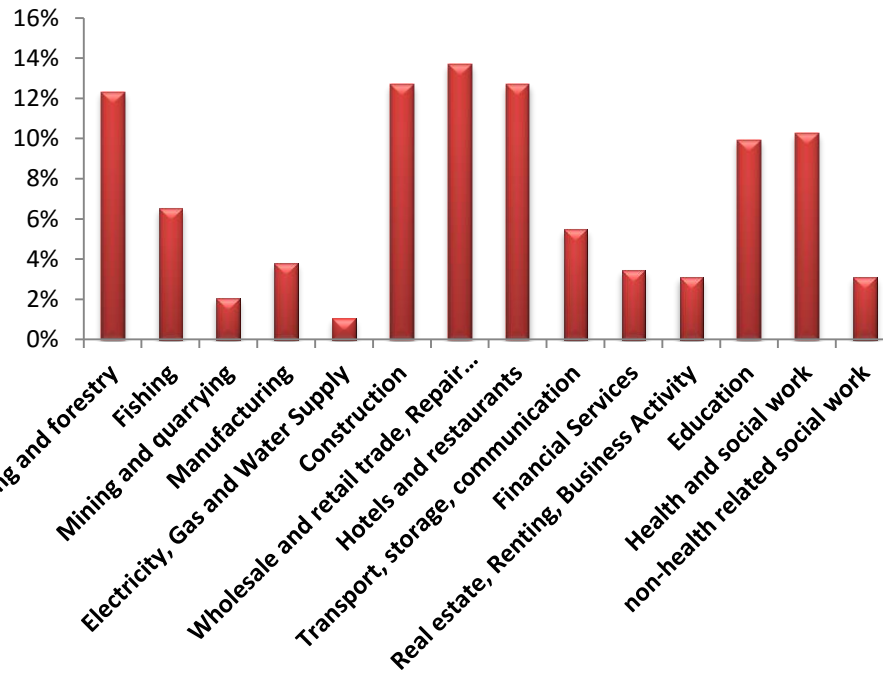
Governorate



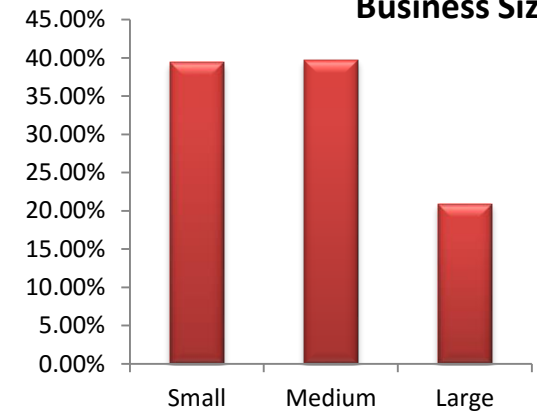
DEMOGRAPHICS - BUSINESS

How participants differed in 2015?

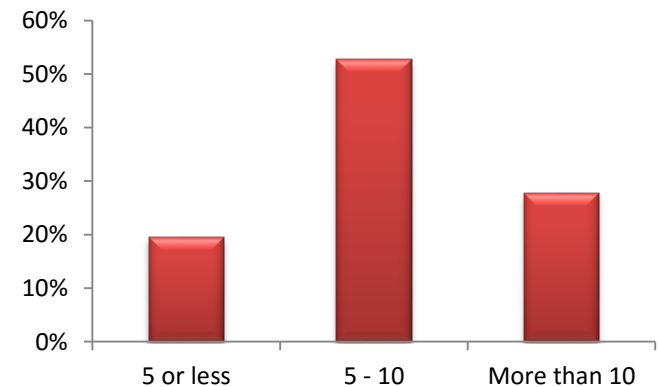
Sample size



Business Size

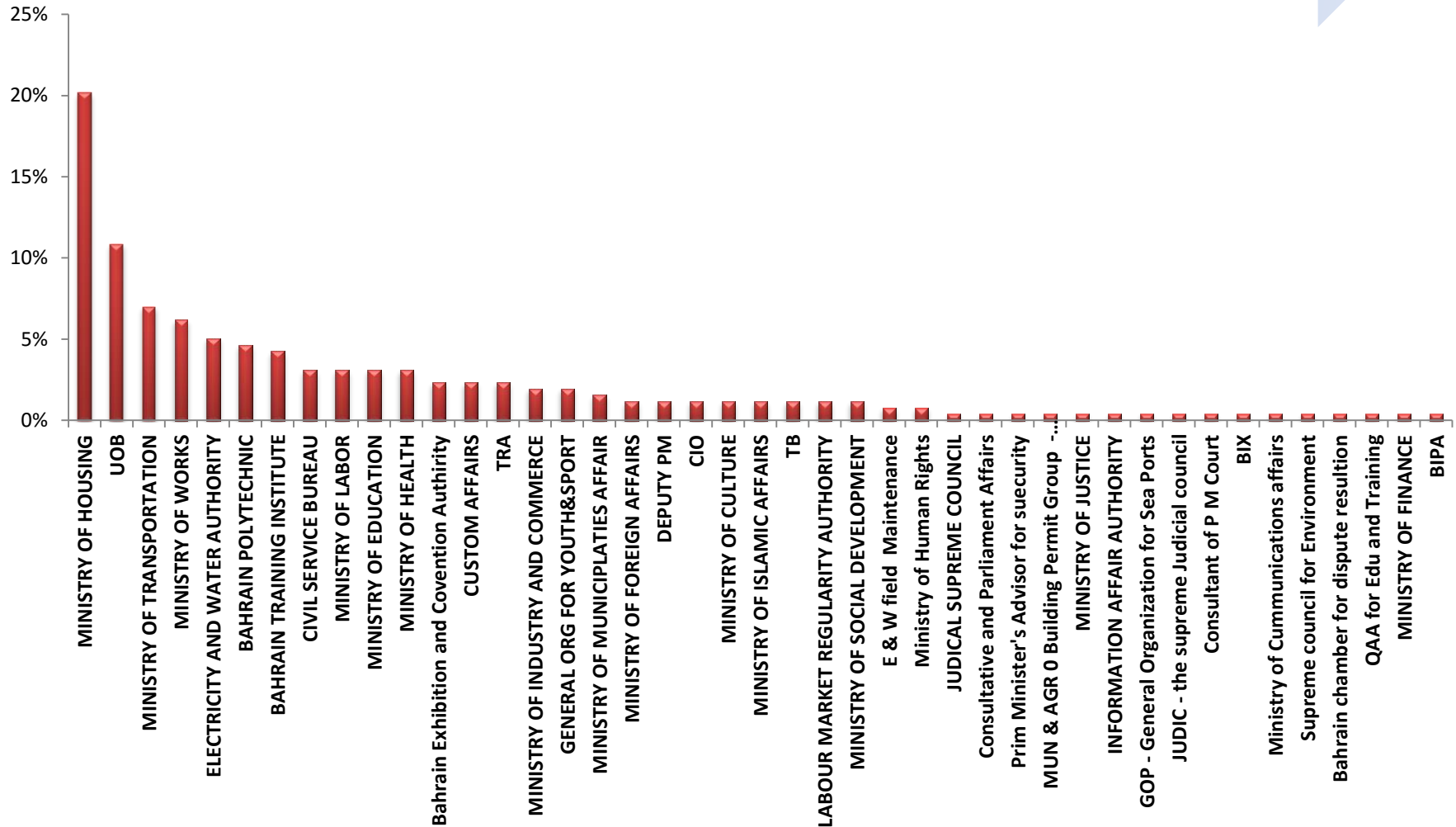


Year since established



DEMOGRAPHICS - GOVERNMENT

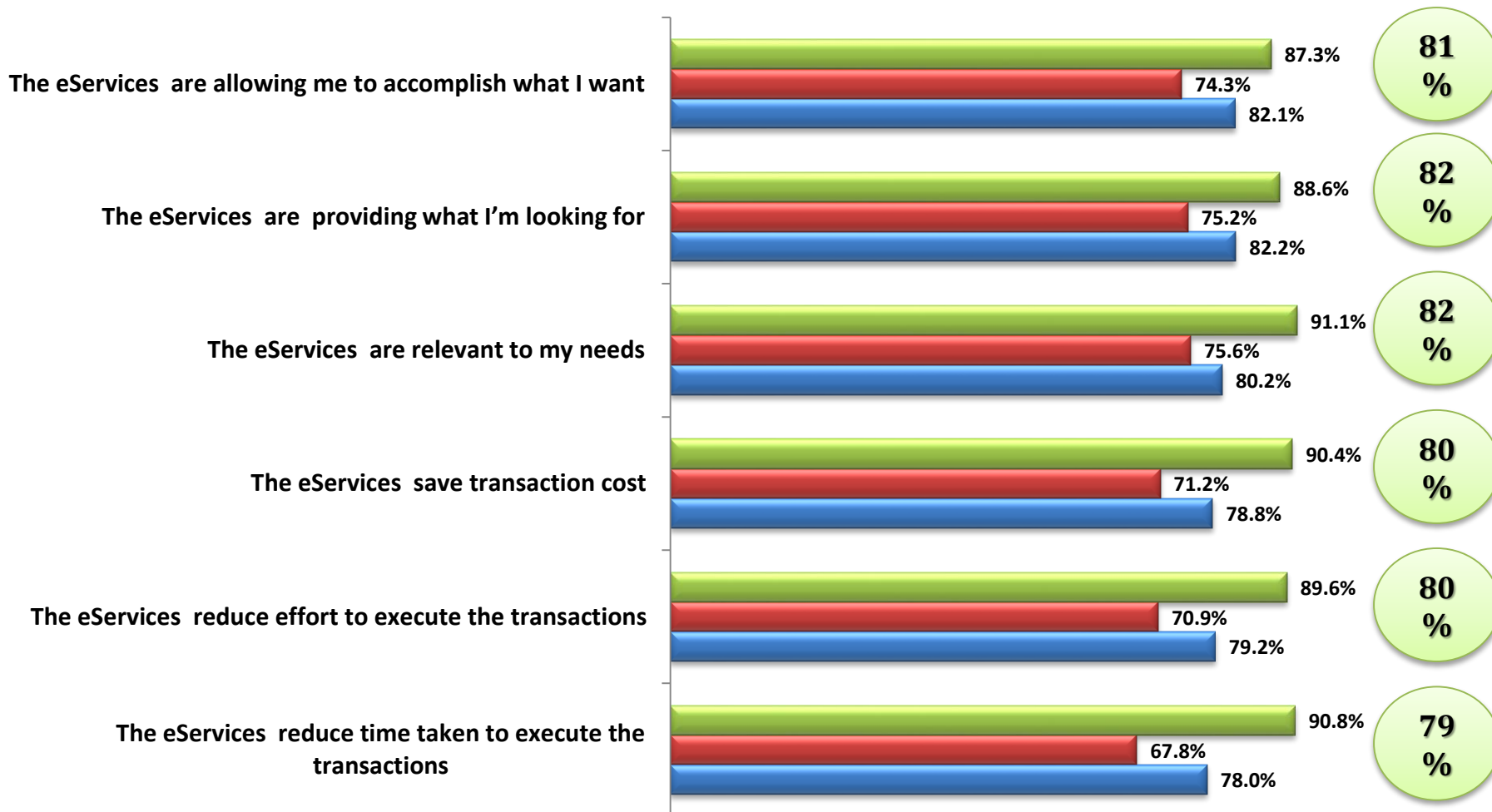
How participants differed in 2015?



AGGREGATE RESULTS

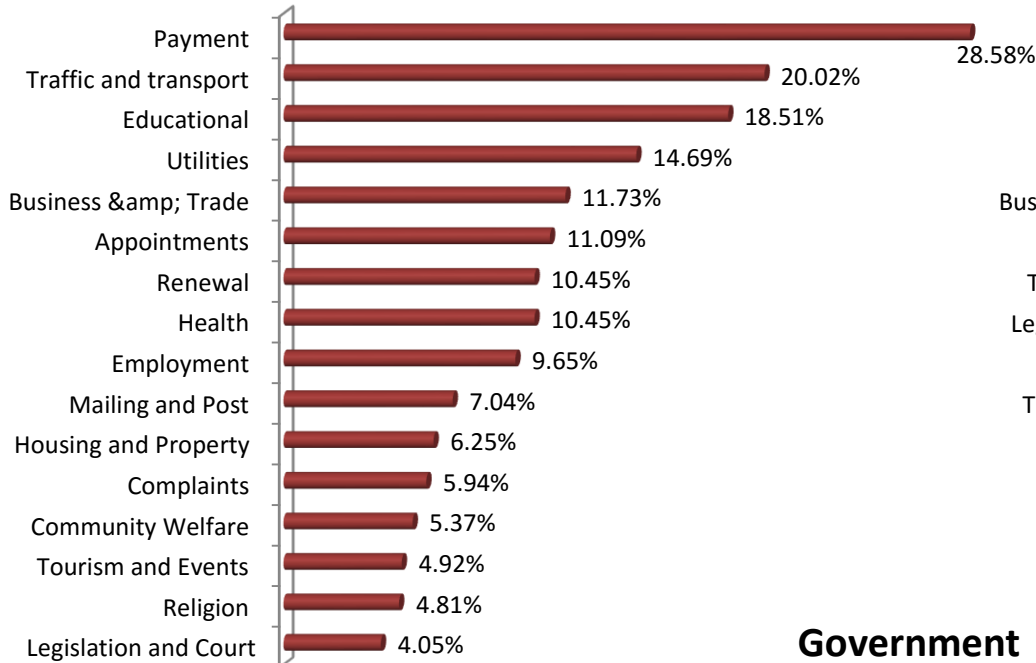
Perceived Benefits of using eServices

■ Government ■ Business ■ Individual

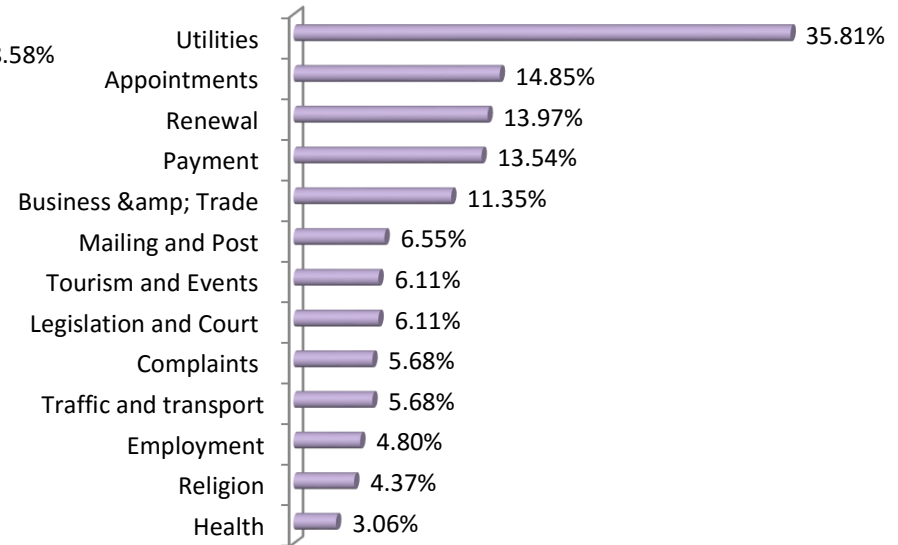


ESERVICE CATEGORIES' USAGE

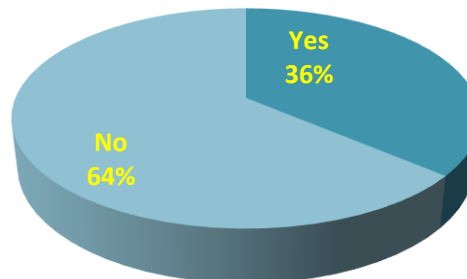
Individual



Business



Government Employment and Training eService



DESCRIPTIVE ANALYSIS



INDIVIDUAL



SATISFACTION & EFFECT ANALYSIS

The satisfaction analysis has been used to describe the set of individual's data in terms of:

1. Individual **overall satisfaction per service category**

2. **Satisfaction causes:**

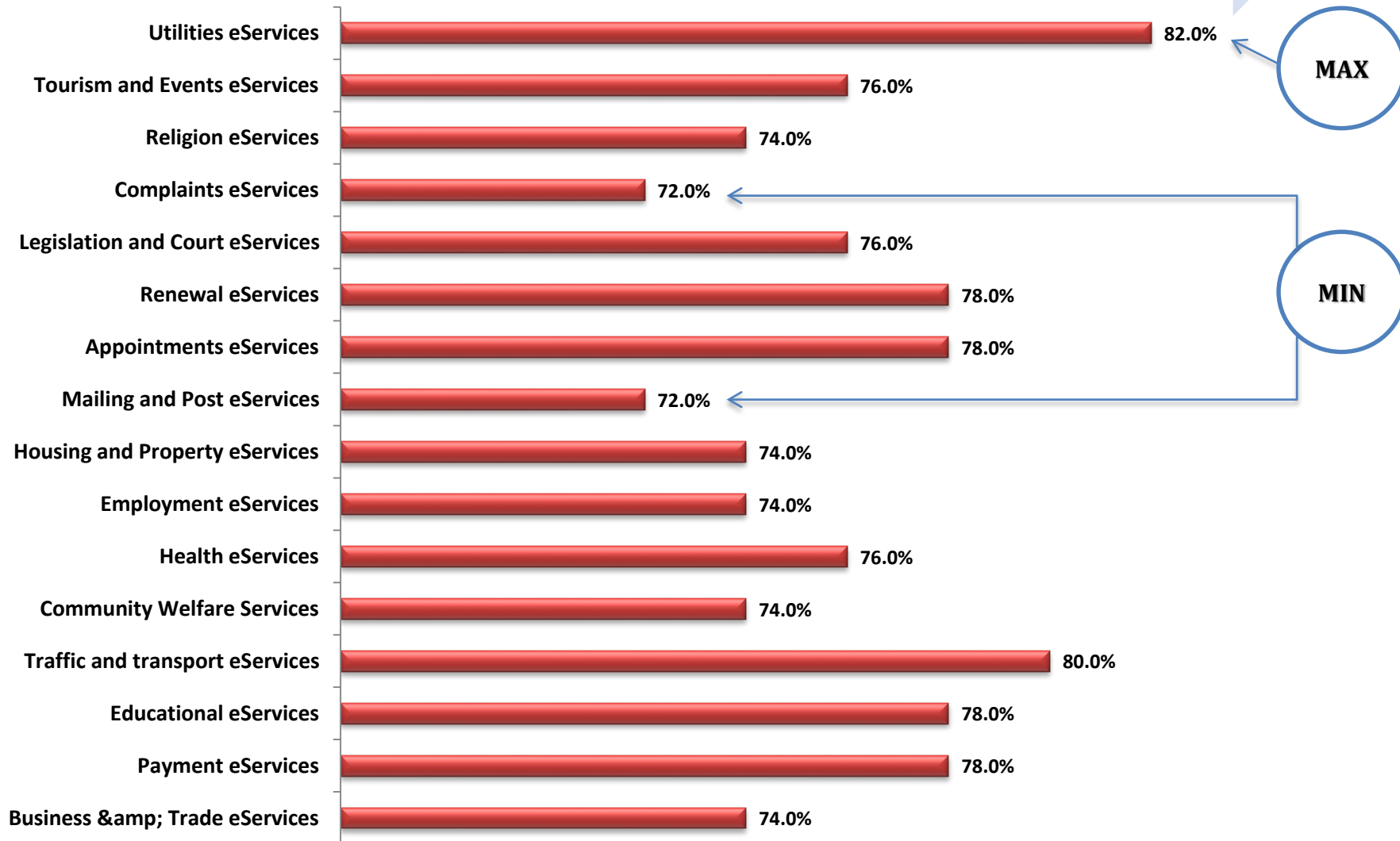
- ☐ Overall Customer expectation
- ☐ Overall Perceived Quality
 - Items measuring the perceived quality (Usability, Information Quality, Security and Responsiveness)

3. **Satisfaction effect:**

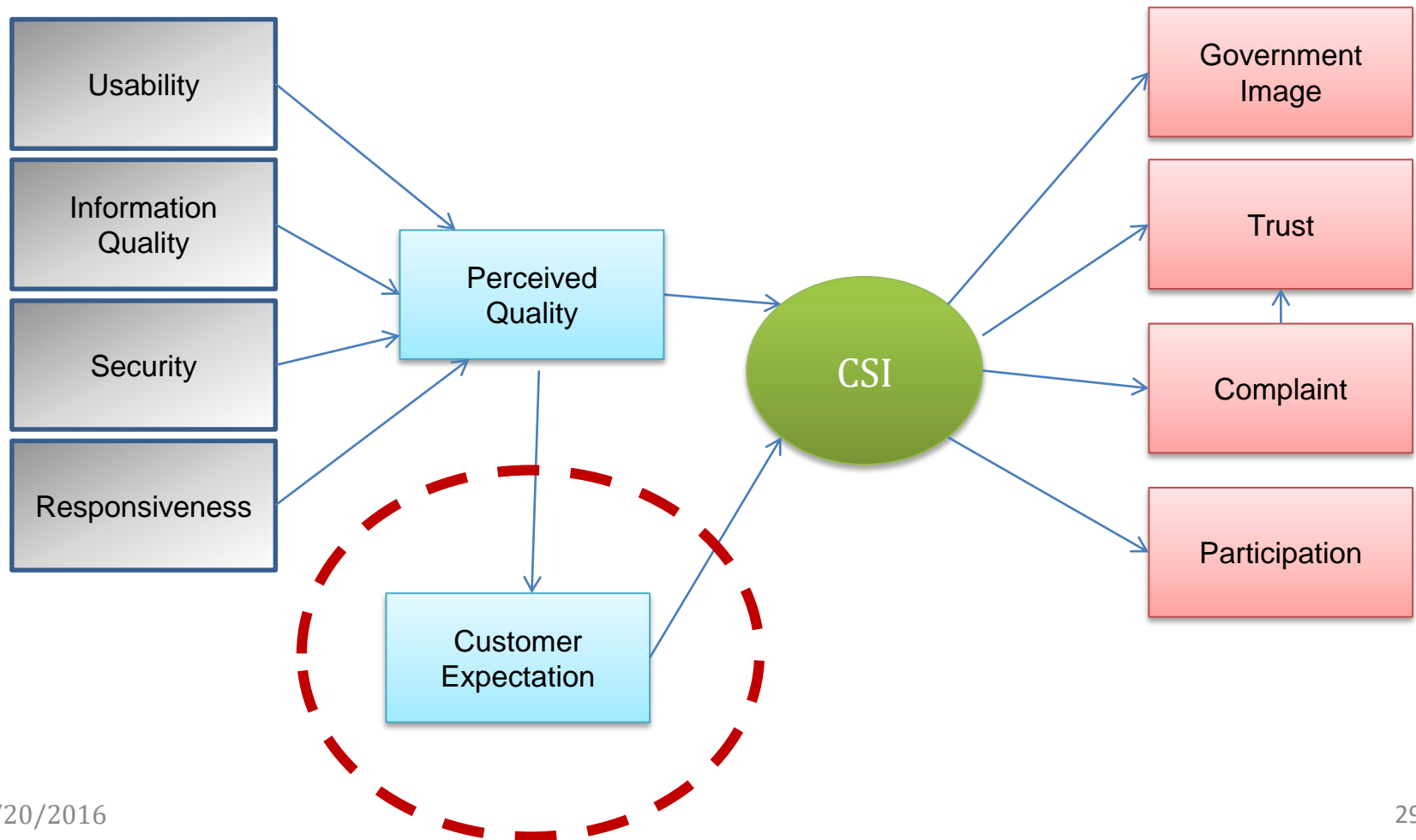
- ☐ Overall Effect/Impact
- ☐ Items measuring the effect (Government Image, Trust, Complaint and Public Participation)

AGGREGATE RESULTS - **INDIVIDUAL**

Customer Satisfaction % per eServices Category

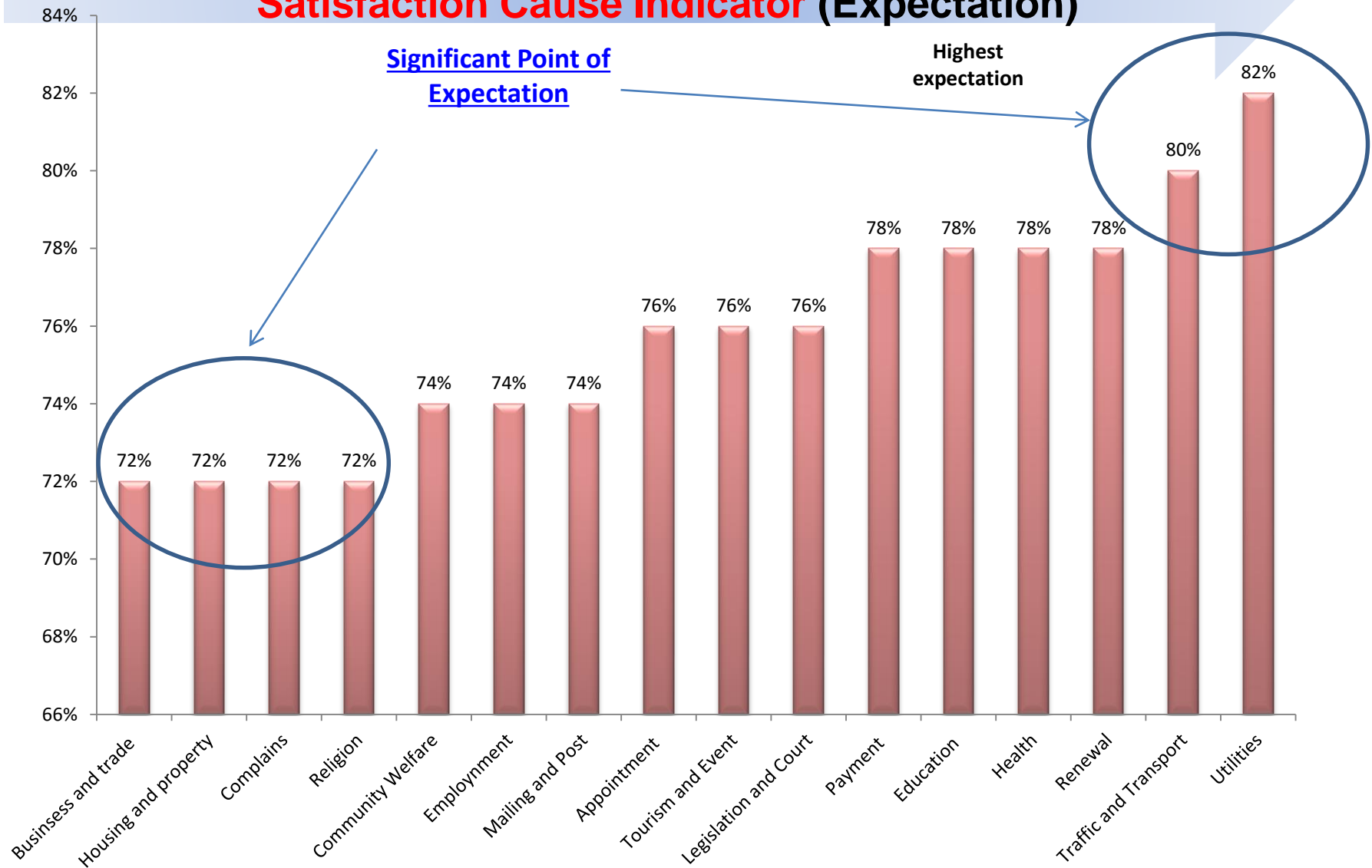


CUSTOMER EXPECTATION

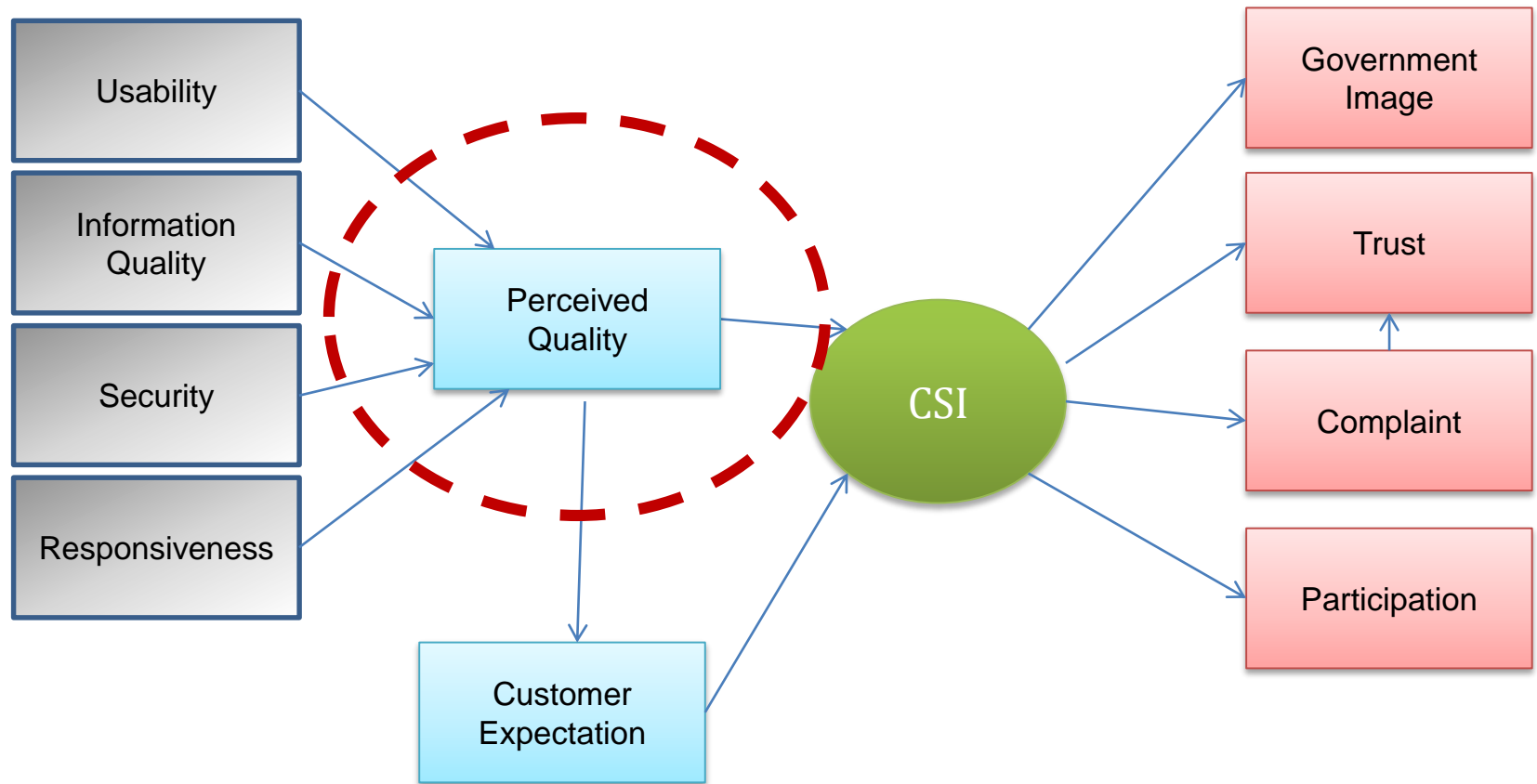


AGGREGATE RESULTS - **INDIVIDUAL**

Satisfaction Cause Indicator (Expectation)

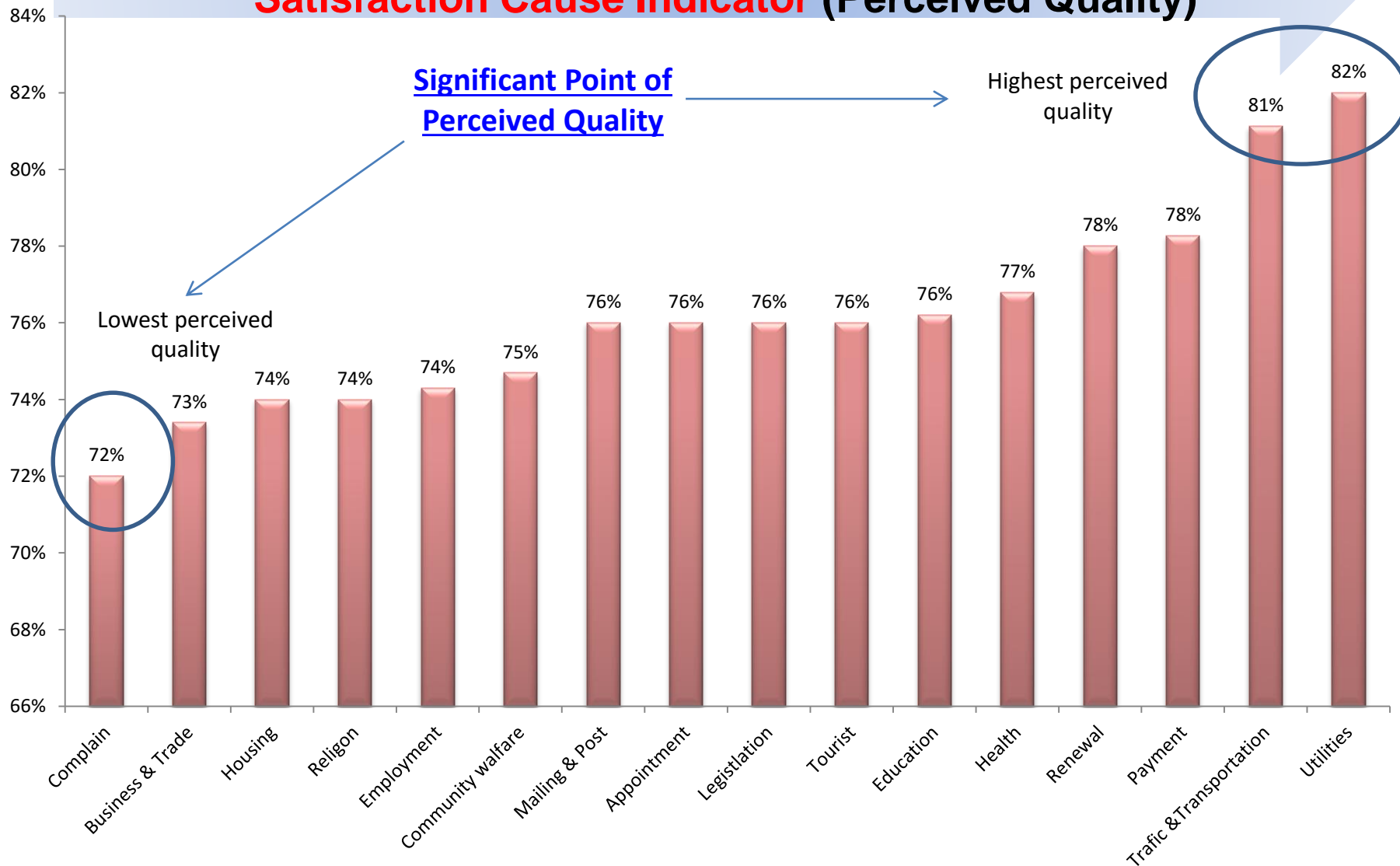


PERCEIVED QUALITY

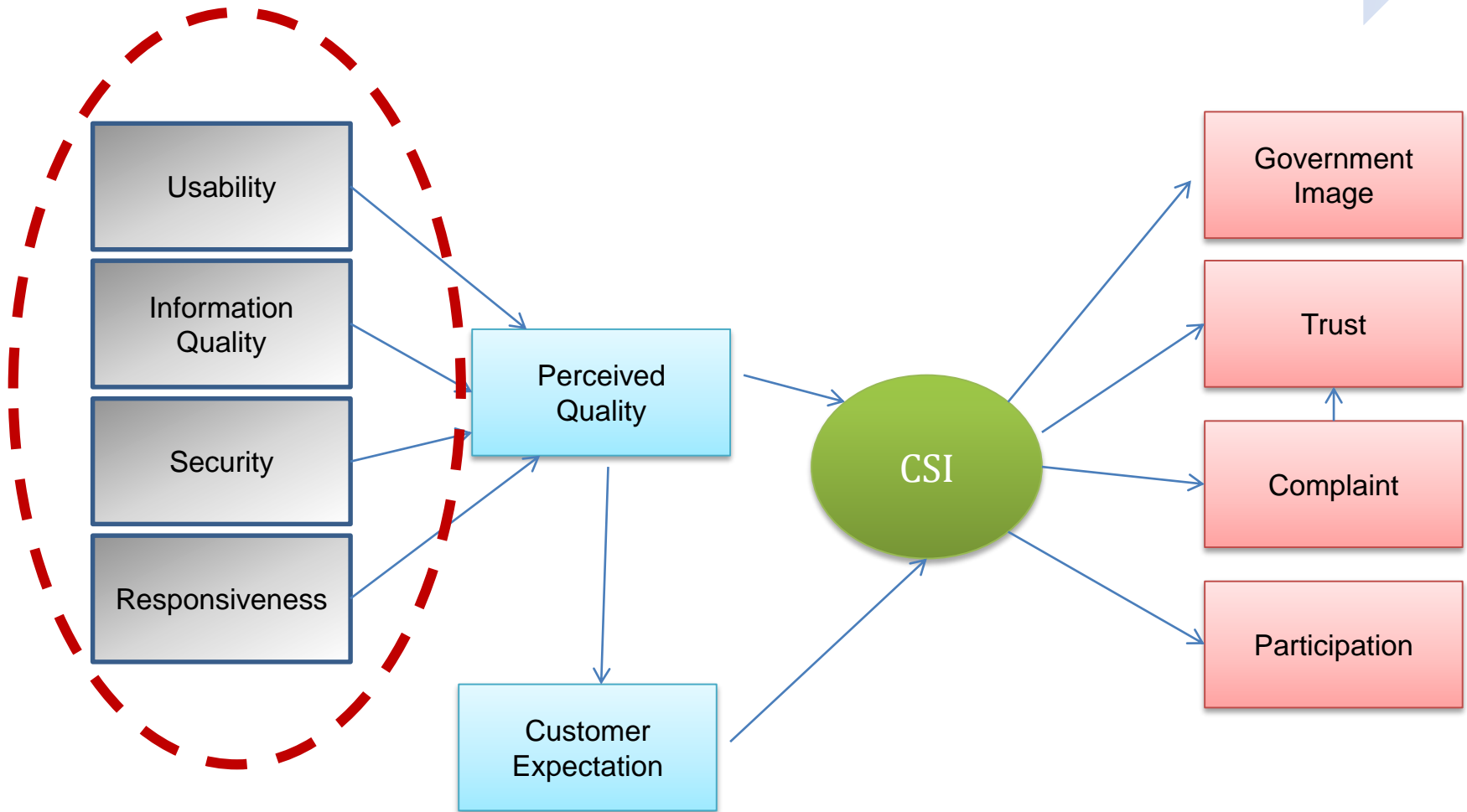


AGGREGATE RESULTS - INDIVIDUAL

Satisfaction Cause Indicator (Perceived Quality)

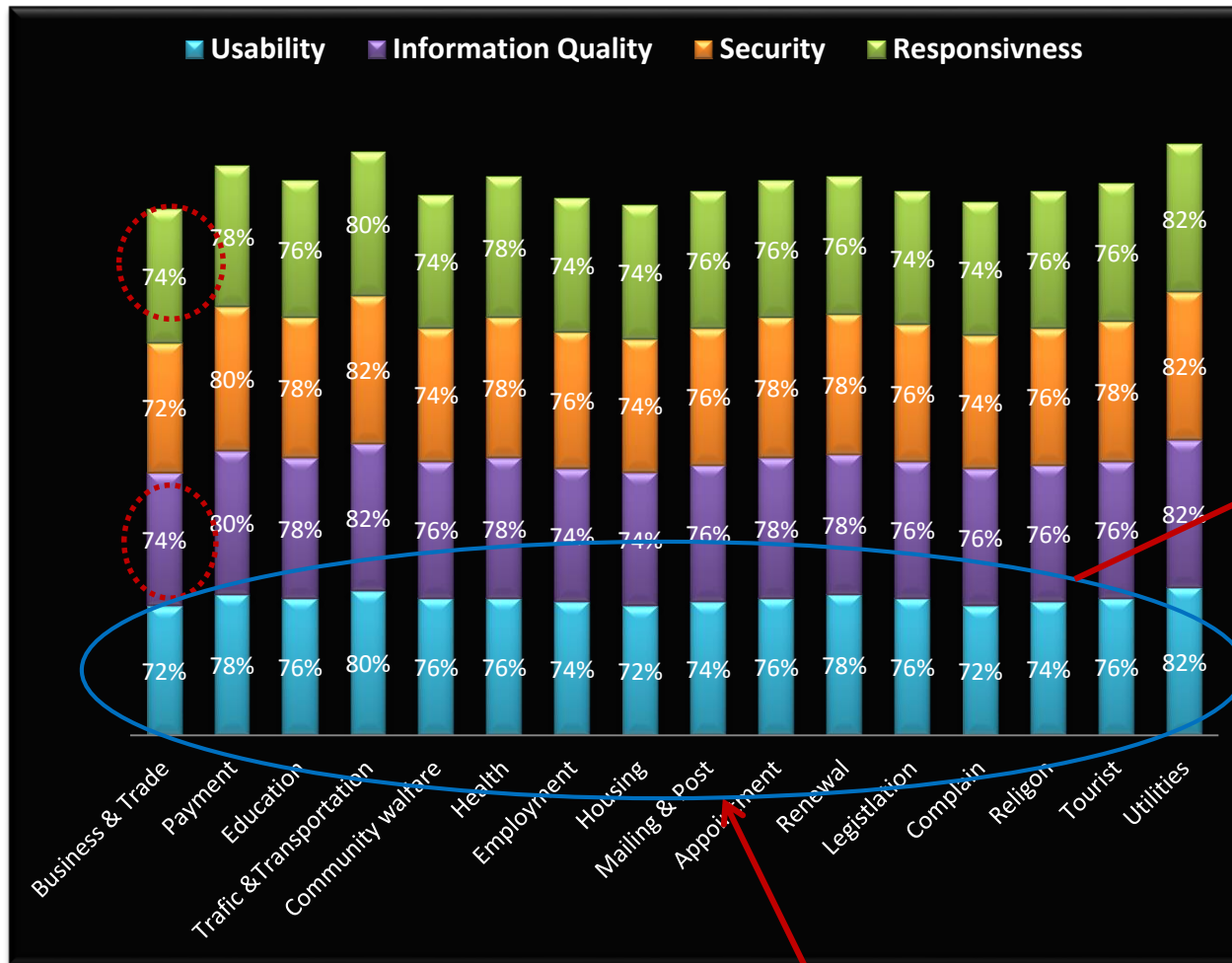


FACTORS AFFECTING PERCEIVED QUALITY



AGGREGATE RESULTS - INDIVIDUAL

Factors measuring Perceived Quality



Complain e-services

eServices-Graphics and animation do not detract me from use.

74%

eServices-Scrolling through pages is kept to a minimum.

74%

eServices-Navigation is consistent and standardized.

72%

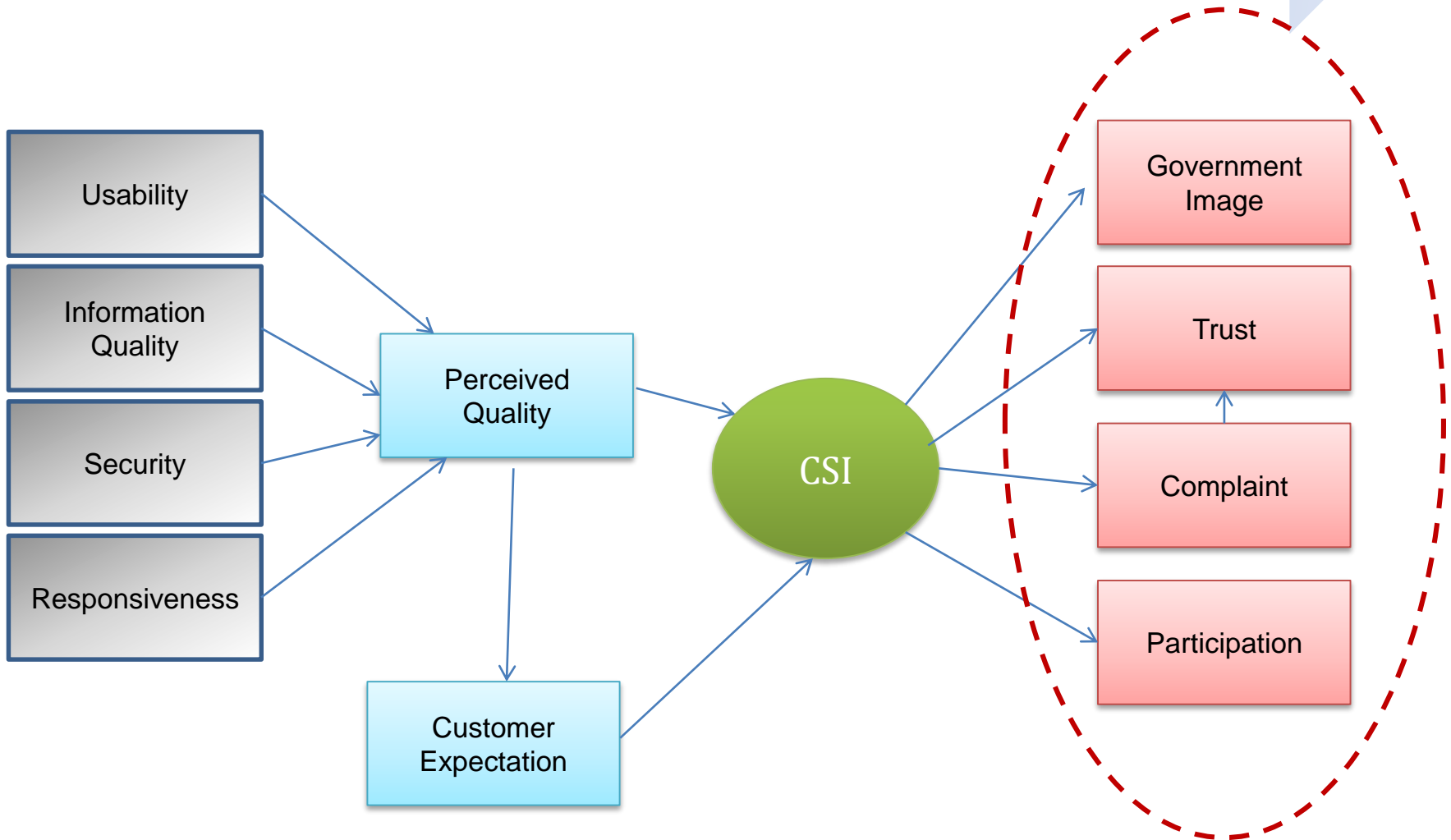
eServices-Easy to find what need.

72%

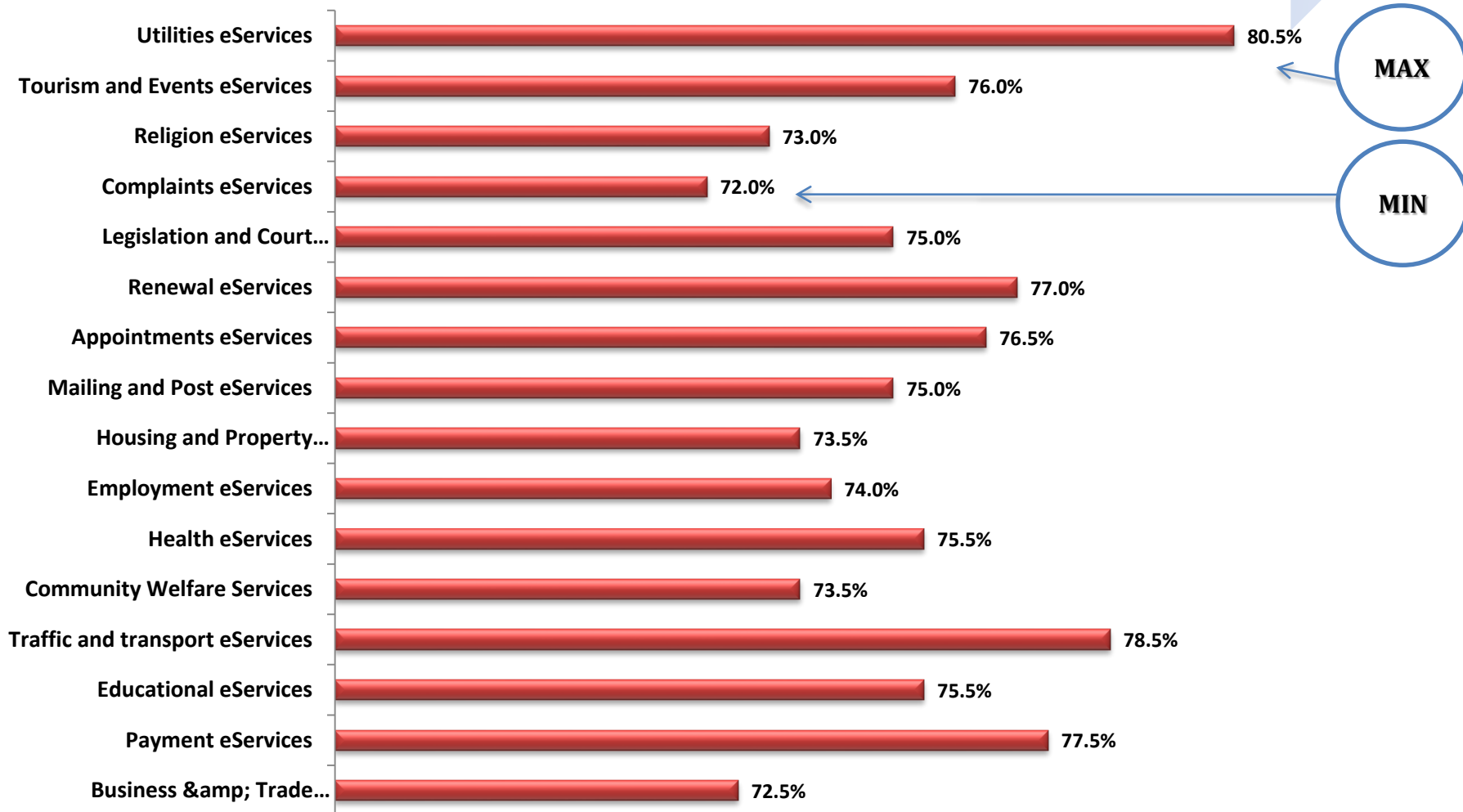
Needs to be improved

Weakness mostly in usability

IMPACT / EFFECT

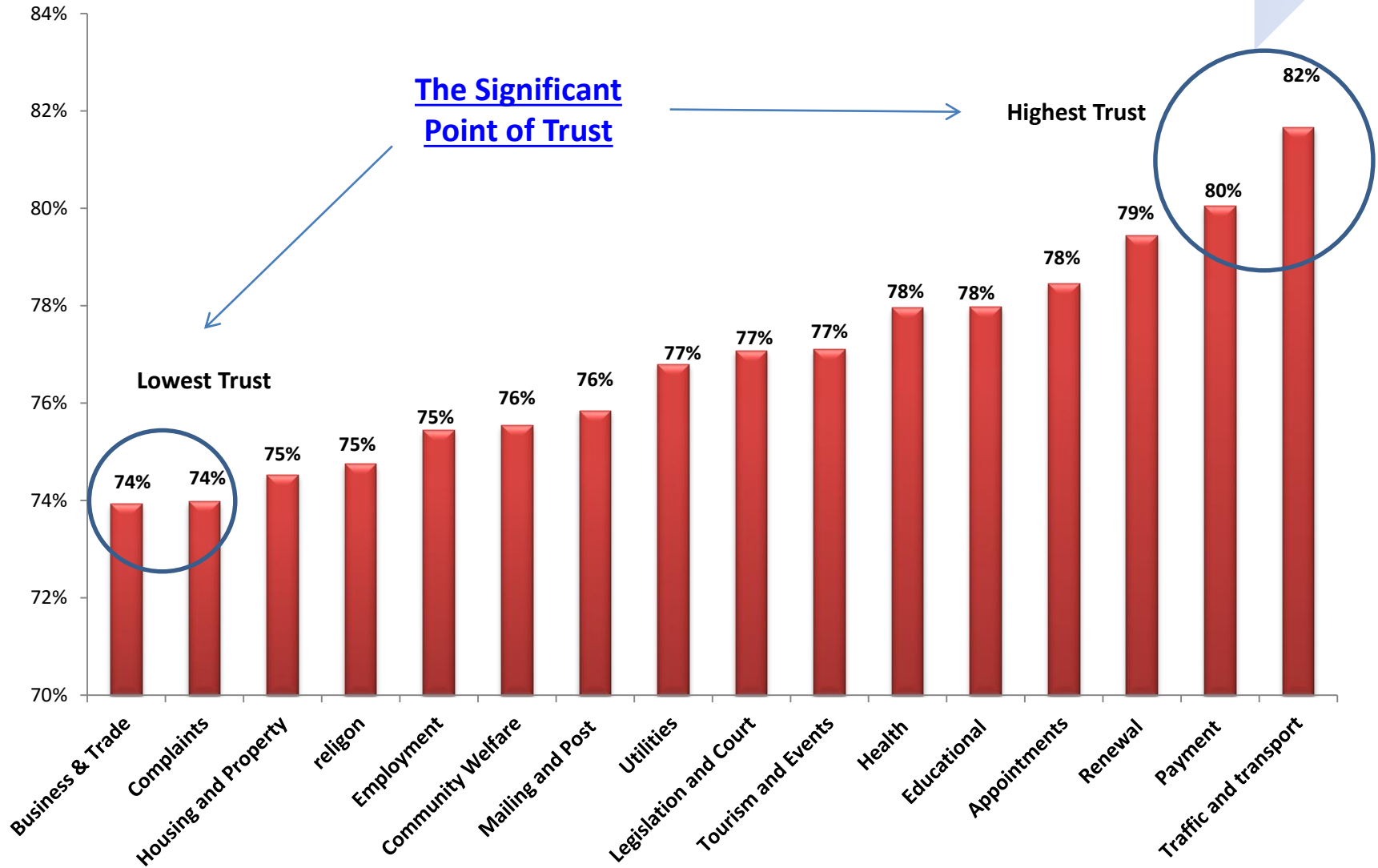


OVERALL EFFECT - **INDIVIDUAL**



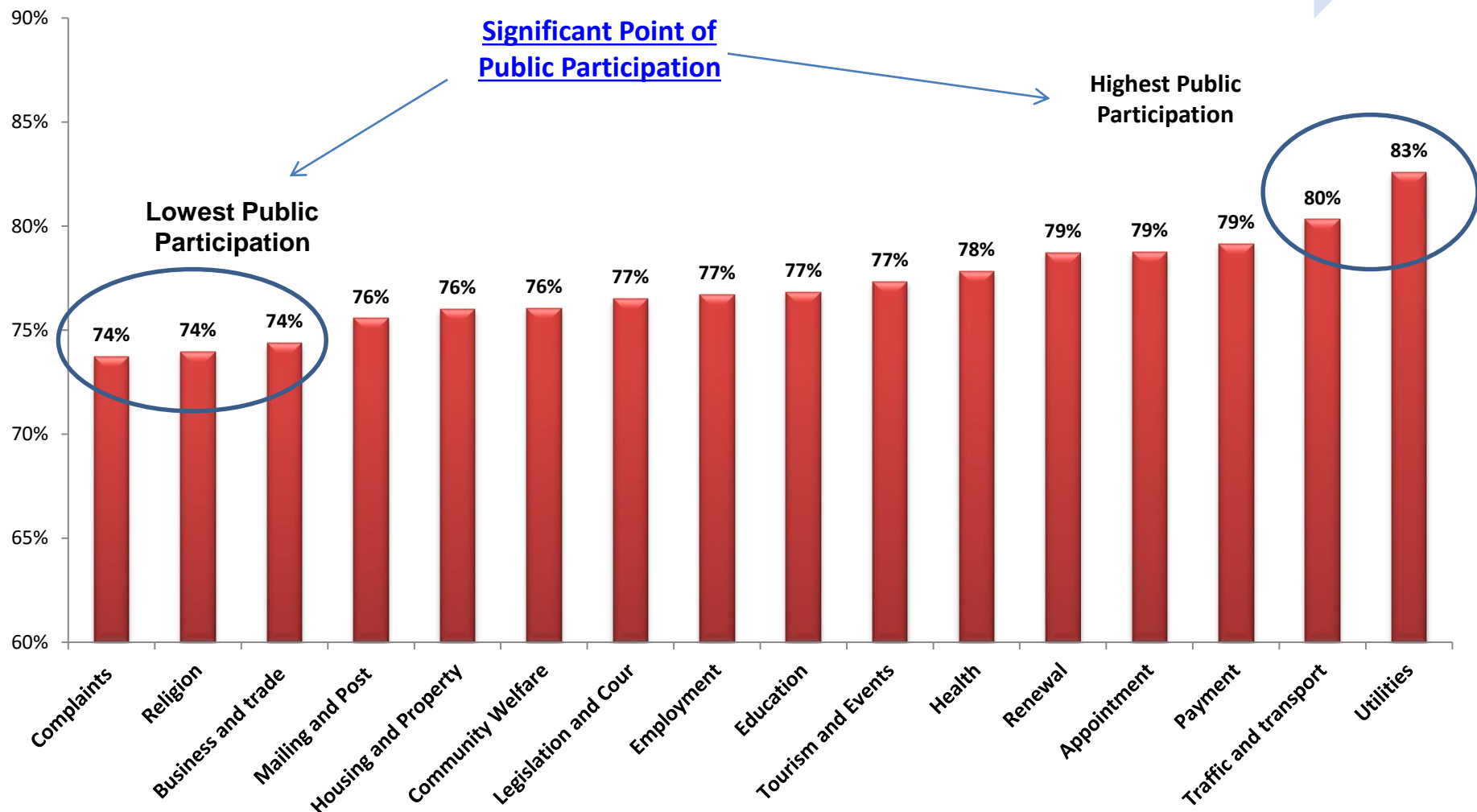
AGGREGATE RESULTS - **INDIVIDUAL**

Satisfaction Effect Indicator (Trust)



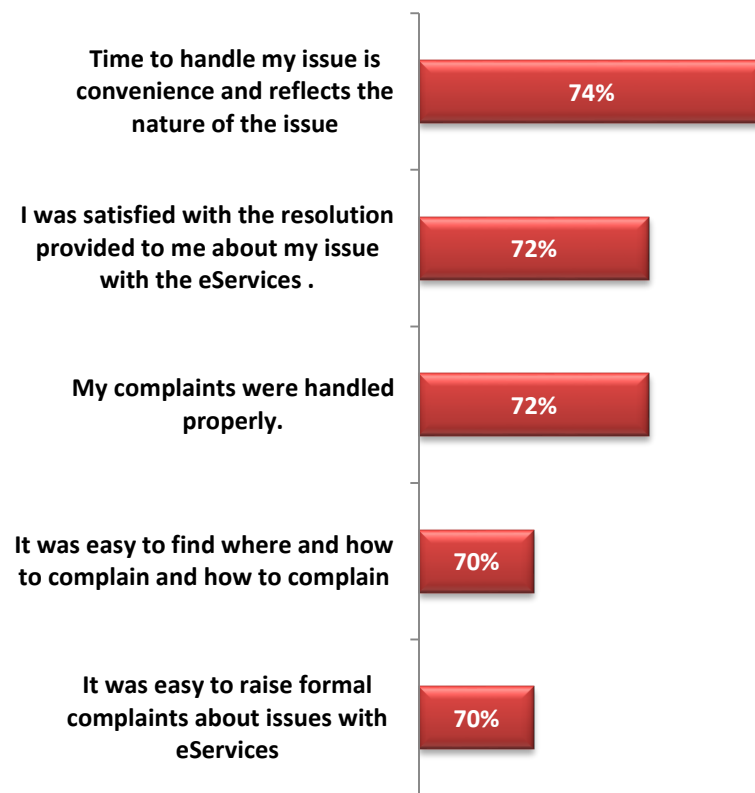
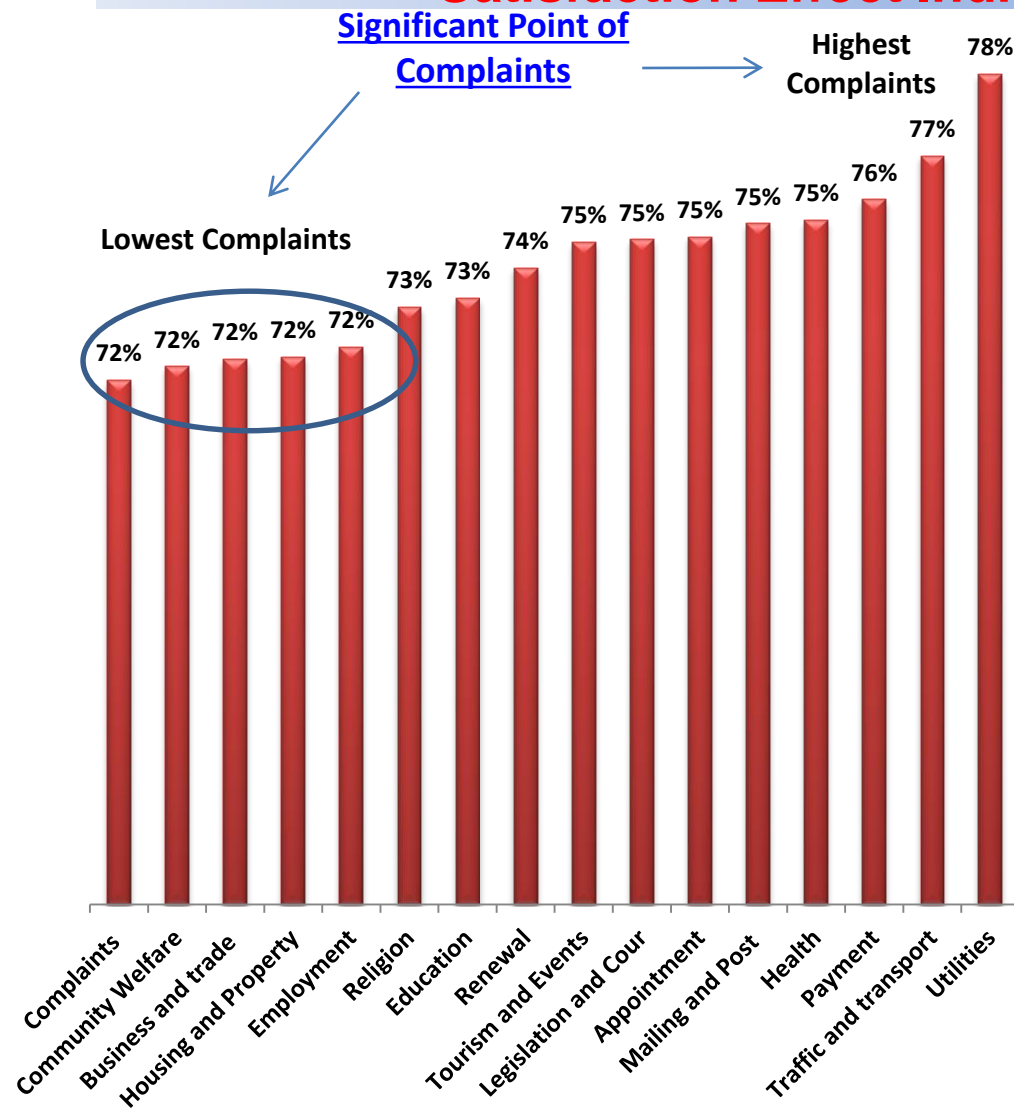
AGGREGATE RESULTS - **INDIVIDUAL**

Satisfaction Effect Indicator (Public Participation)



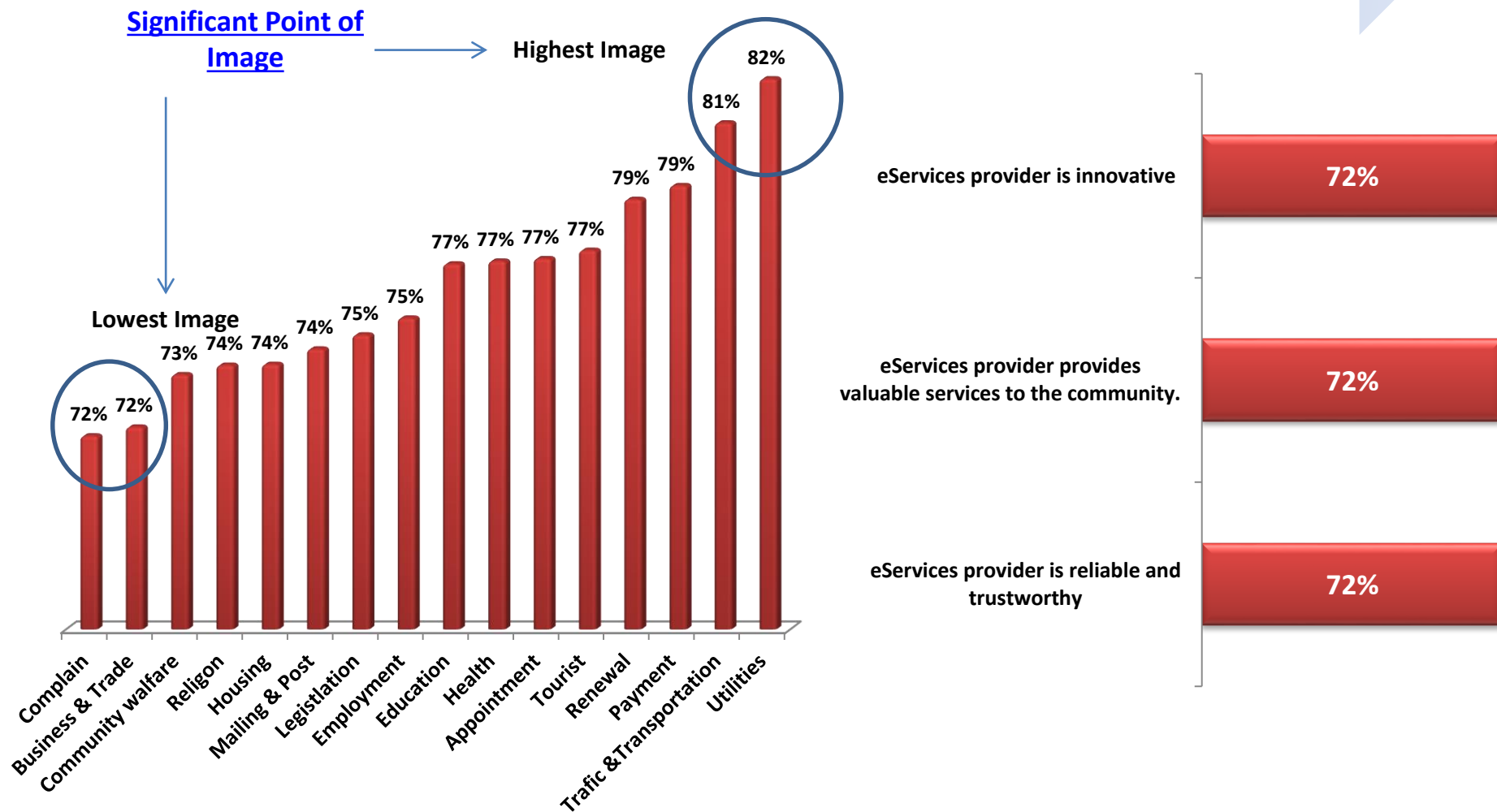
AGGREGATE RESULTS - INDIVIDUAL

Satisfaction Effect Indicator (Complaints)



AGGREGATE RESULTS - **INDIVIDUAL**

Satisfaction Effect Indicator (Image)



DESCRIPTIVE ANALYSIS



BUSINESS

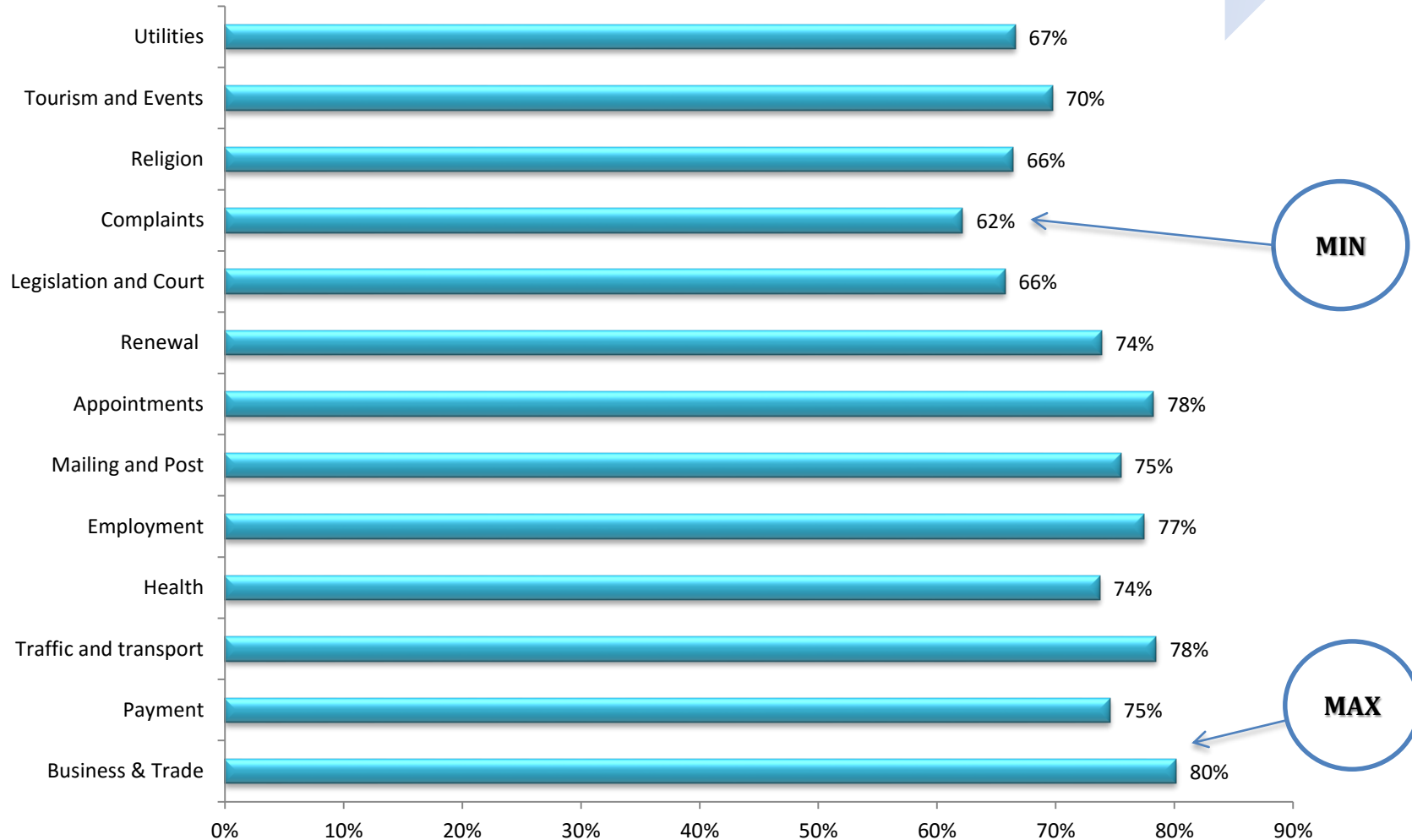


SATISFACTION & EFFECT ANALYSIS

- The satisfaction analysis has been used to describe the set of business's stakeholder data in terms of:
 1. Overall satisfaction per service category
 2. **Satisfaction causes:**
 - ☐ Overall Customer expectation
 - ☐ Overall Perceived Quality
 - Items measuring the perceived quality (Usability, Information Quality, Security and Responsiveness)
 3. **Satisfaction effect:**
 - ☐ Overall Effect/Impact
 - ☐ Items measuring the effect (Government Image, Trust, Complaint and Public Participation)

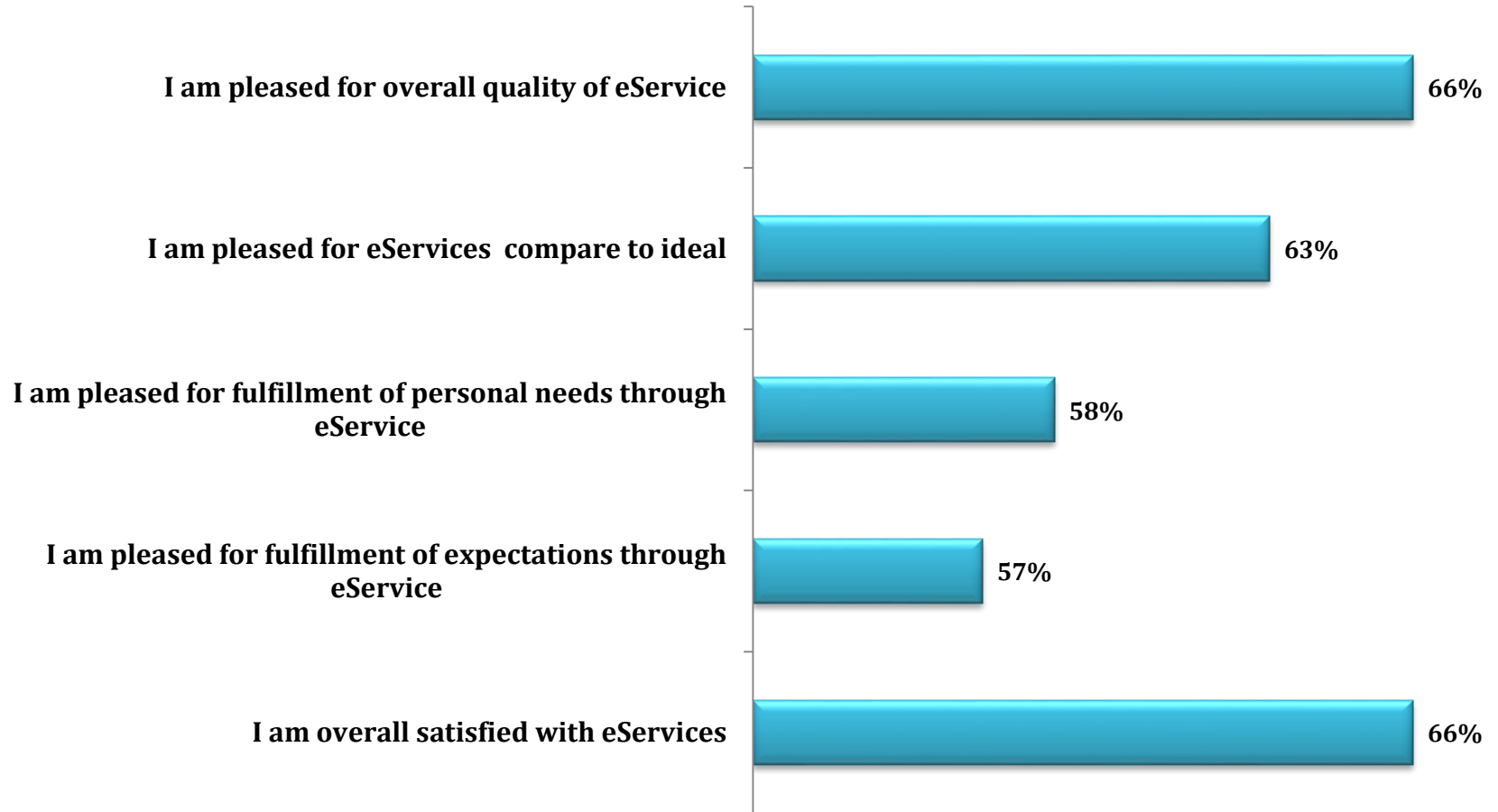
AGGREGATE RESULTS - BUSINESS

Customer Satisfaction % per eServices Category

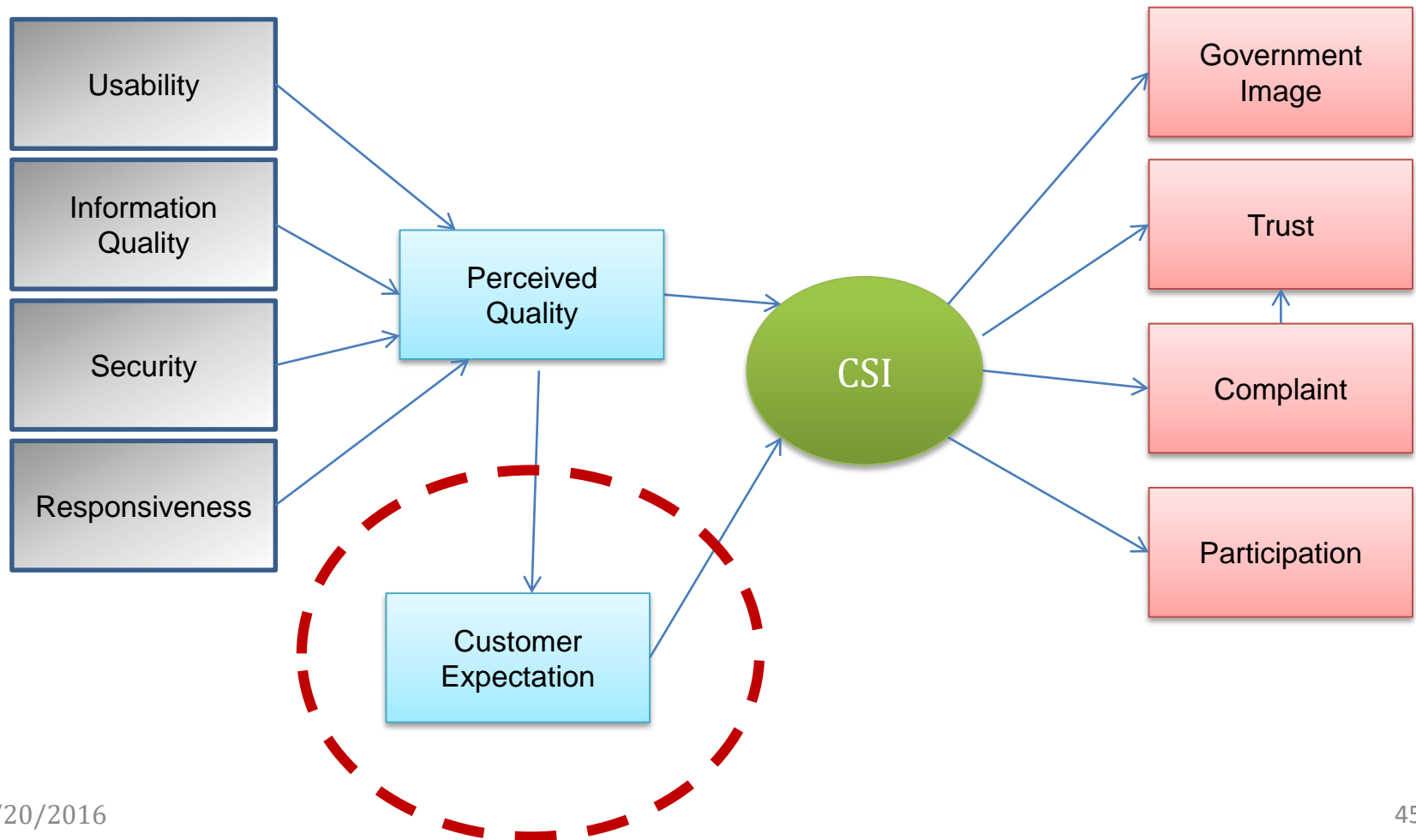


SATISFACTION FOR LOWEST %

Complaints eService

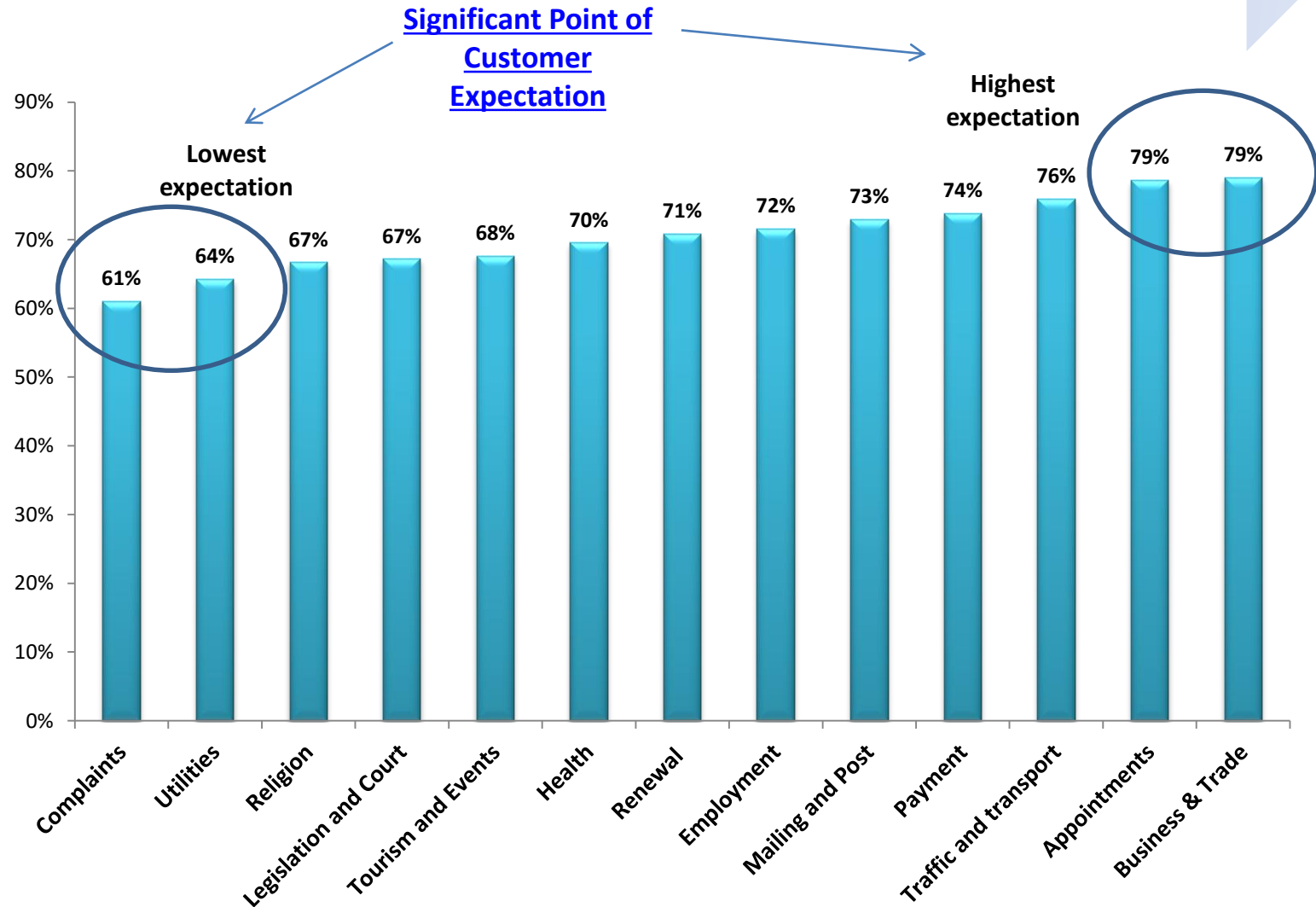


CUSTOMER EXPECTATION



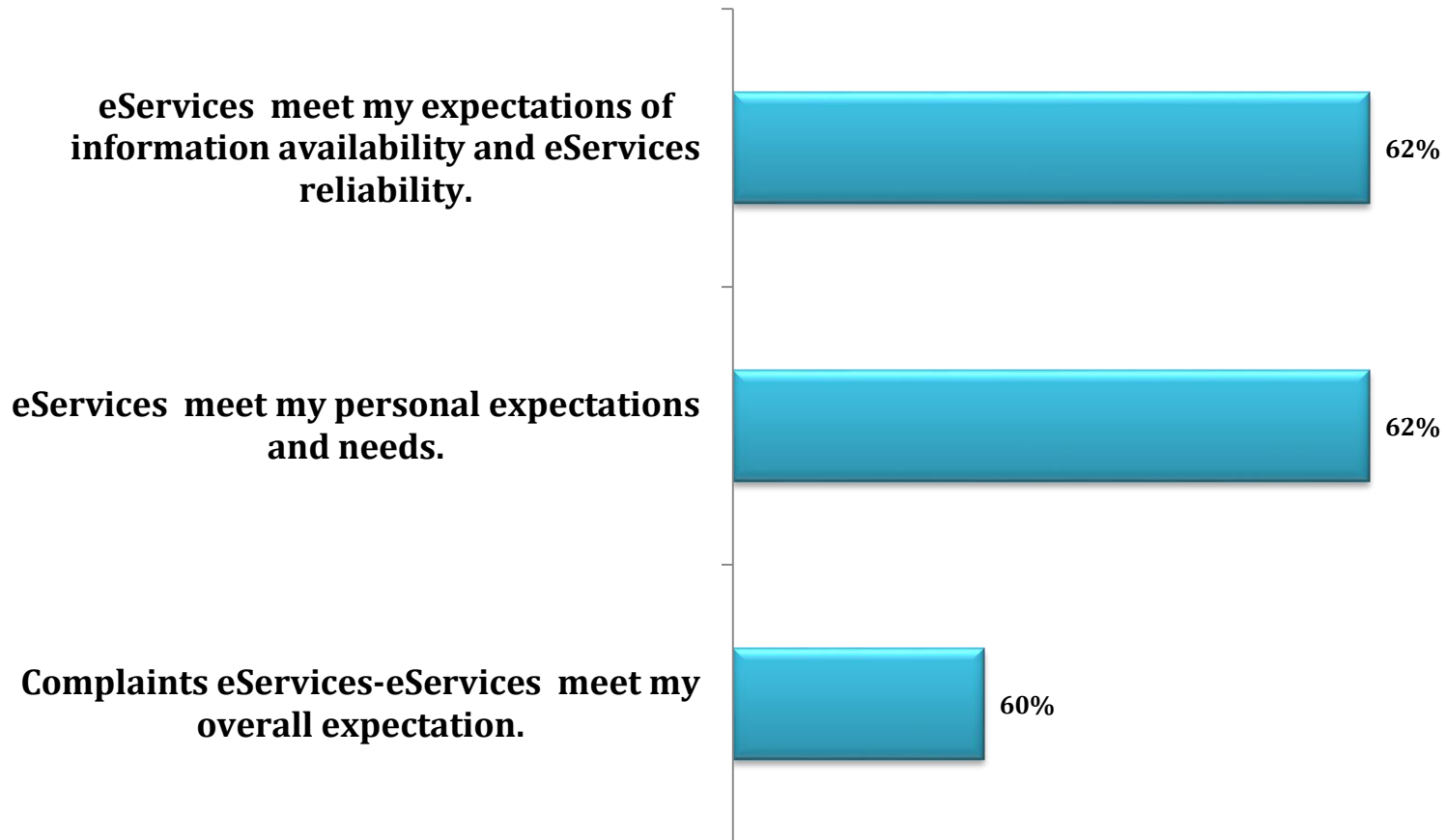
AGGREGATE RESULTS – BUSINESS

Satisfaction Cause Indicator (Expectation)

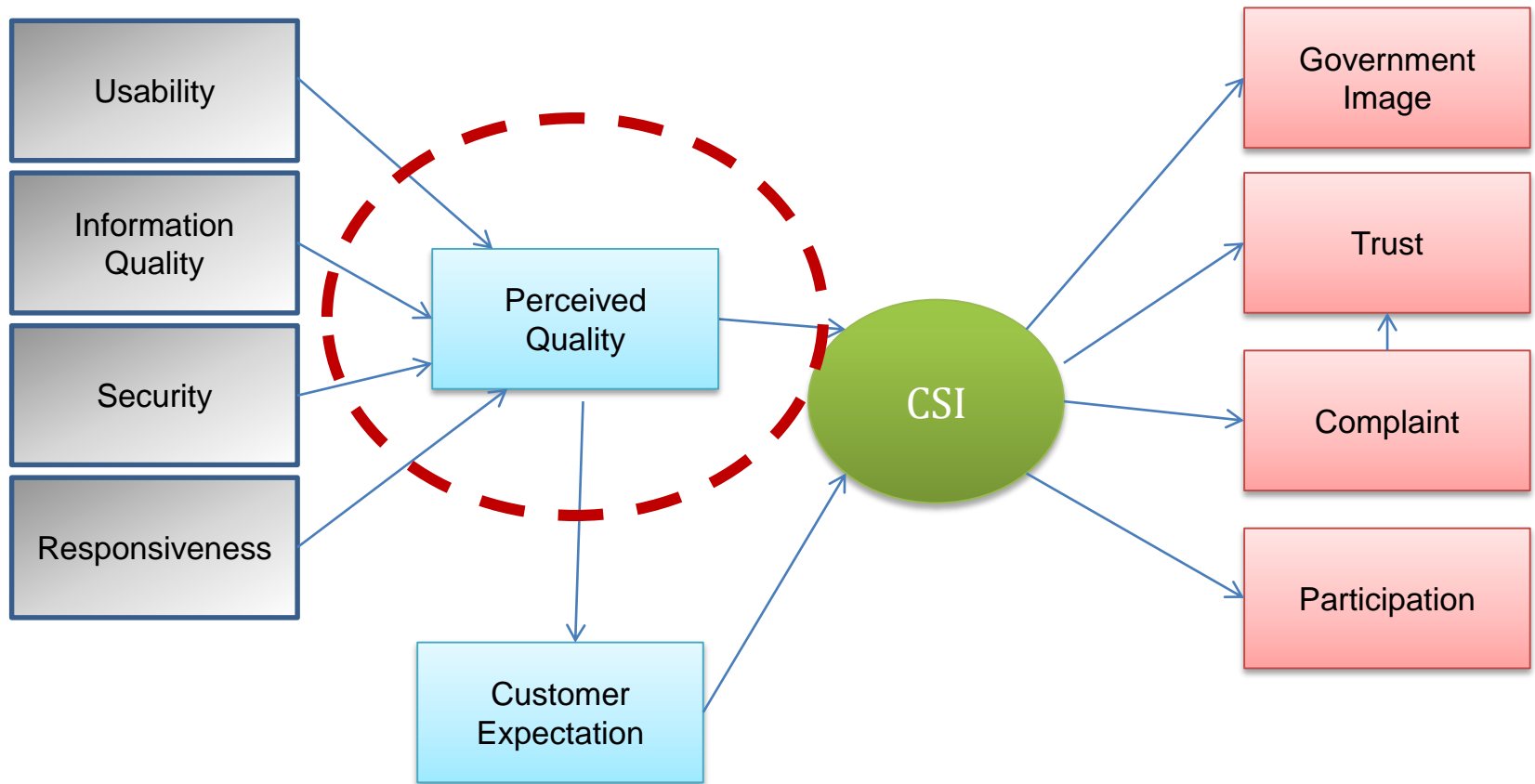


EXPECTATION

Complaints eService

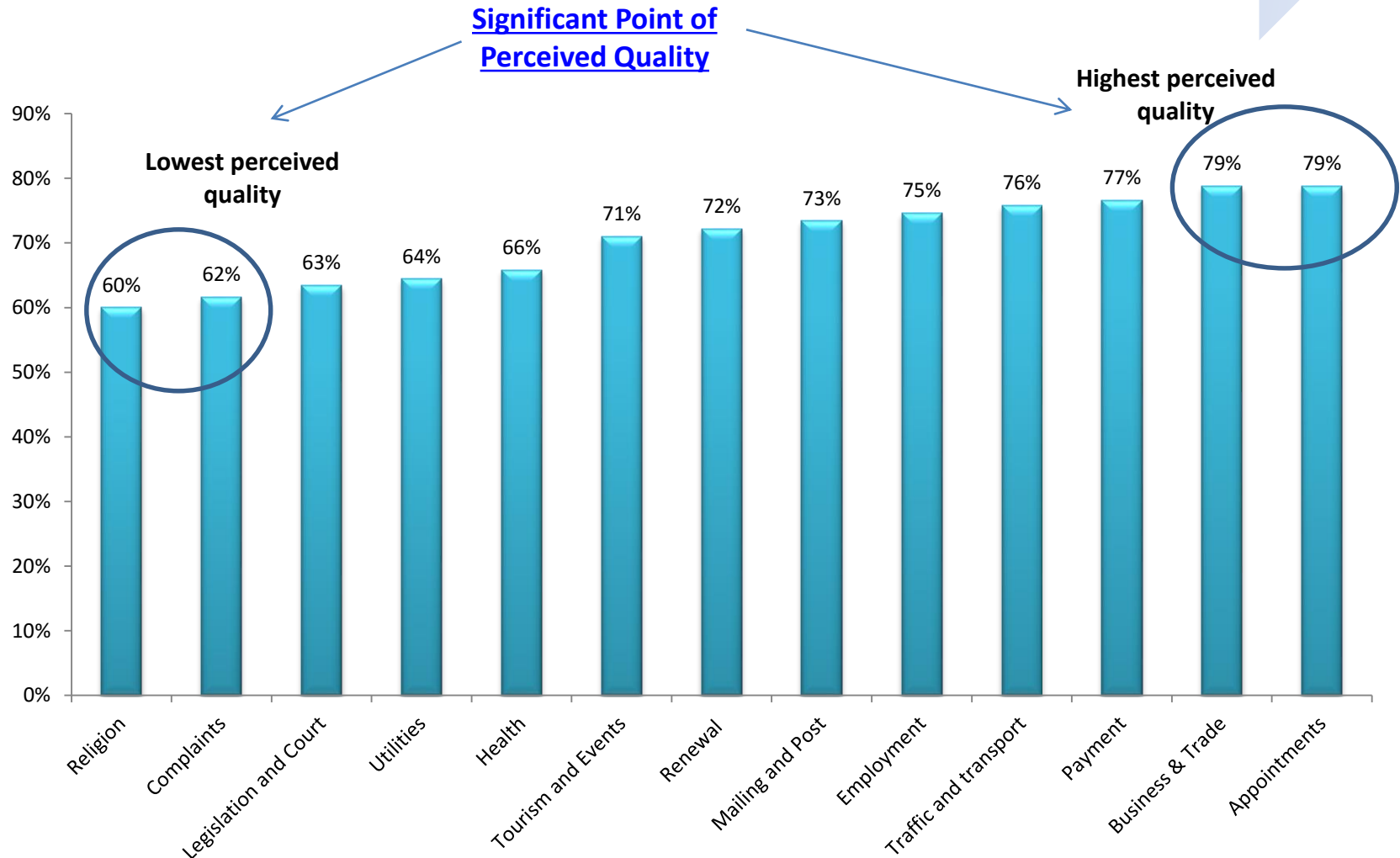


PERCEIVED QUALITY

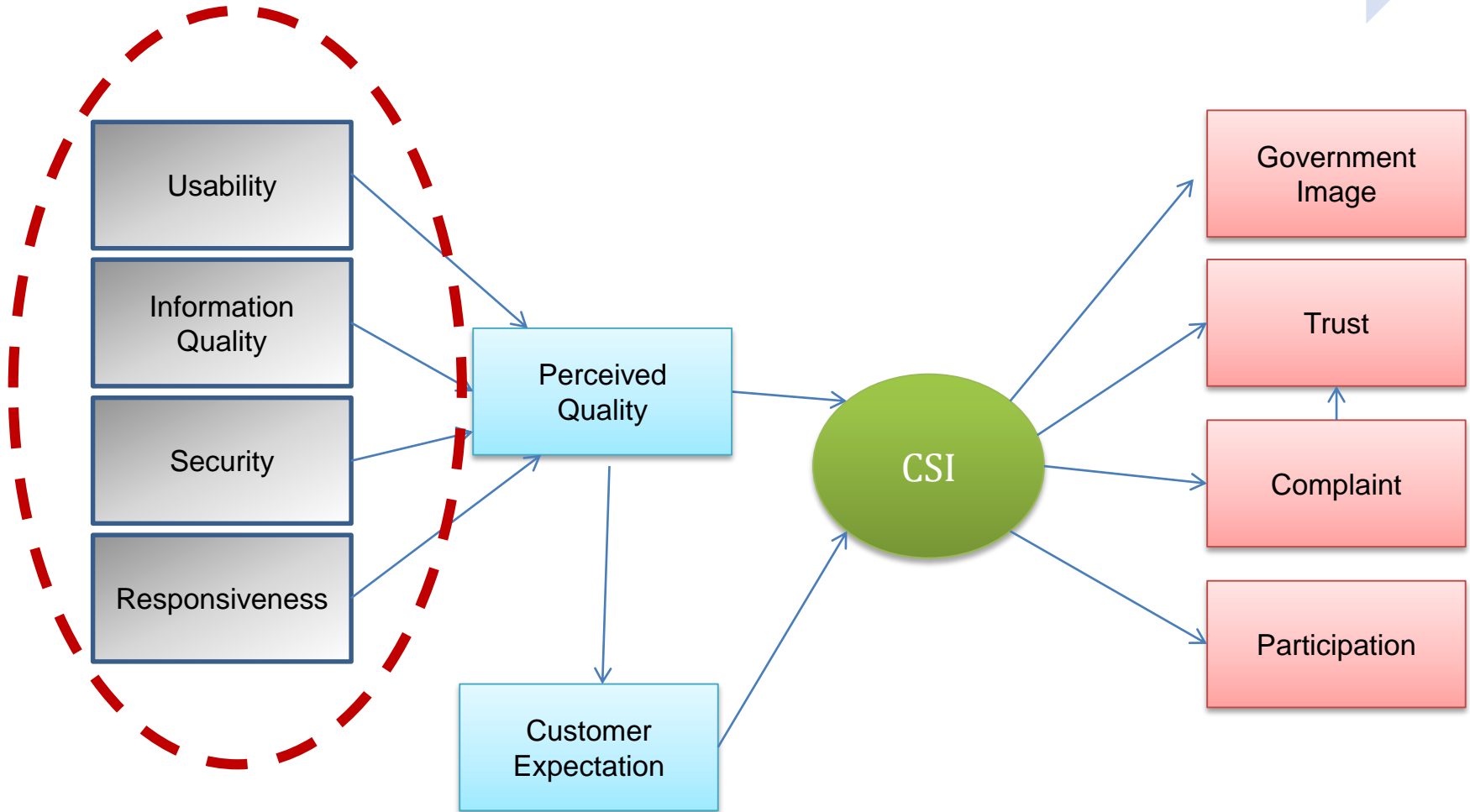


AGGREGATE RESULTS – BUSINESS

Satisfaction Cause Indicator (Perceived Quality)

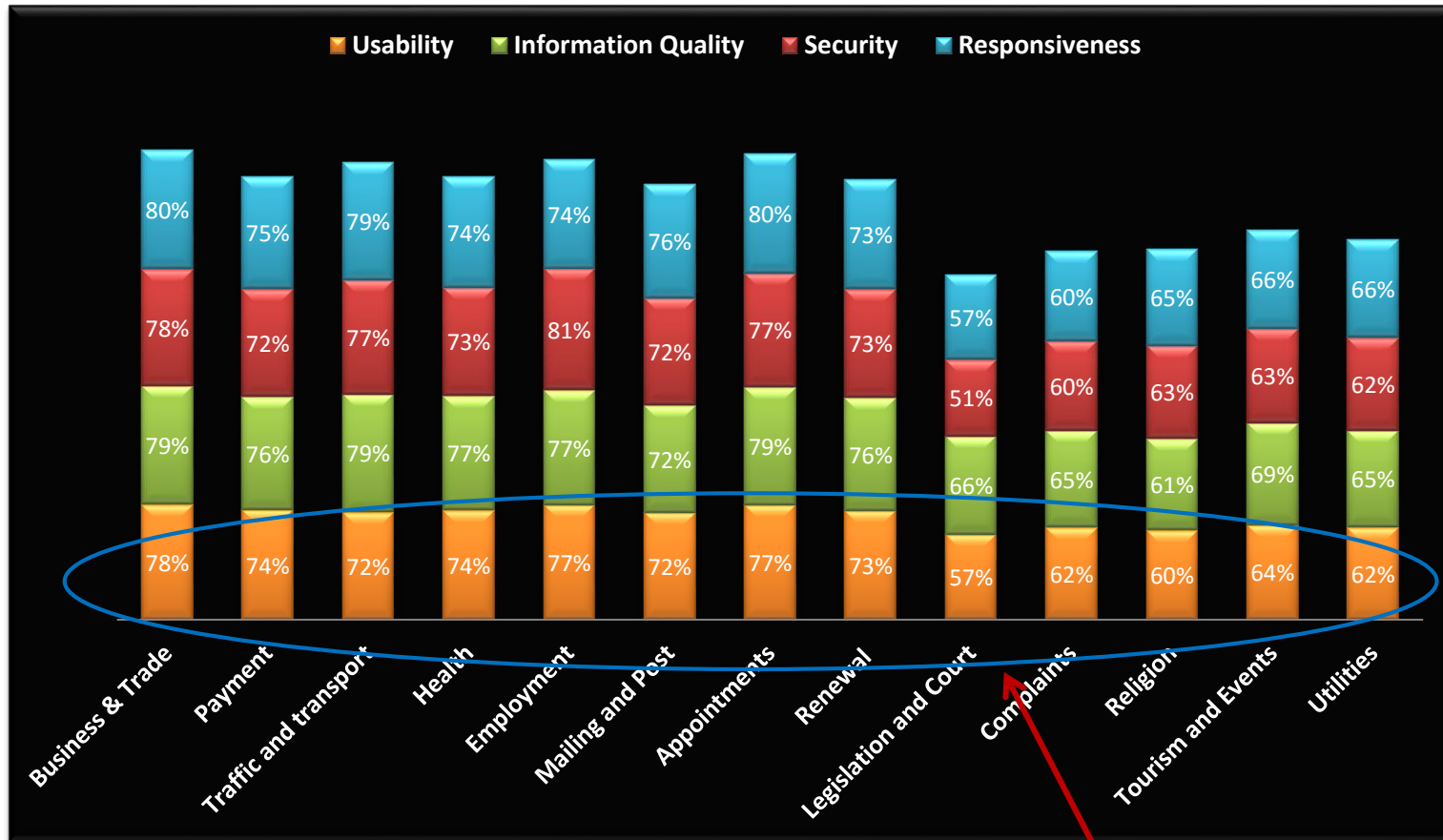


FACTORS AFFECTING PERCEIVED QUALITY



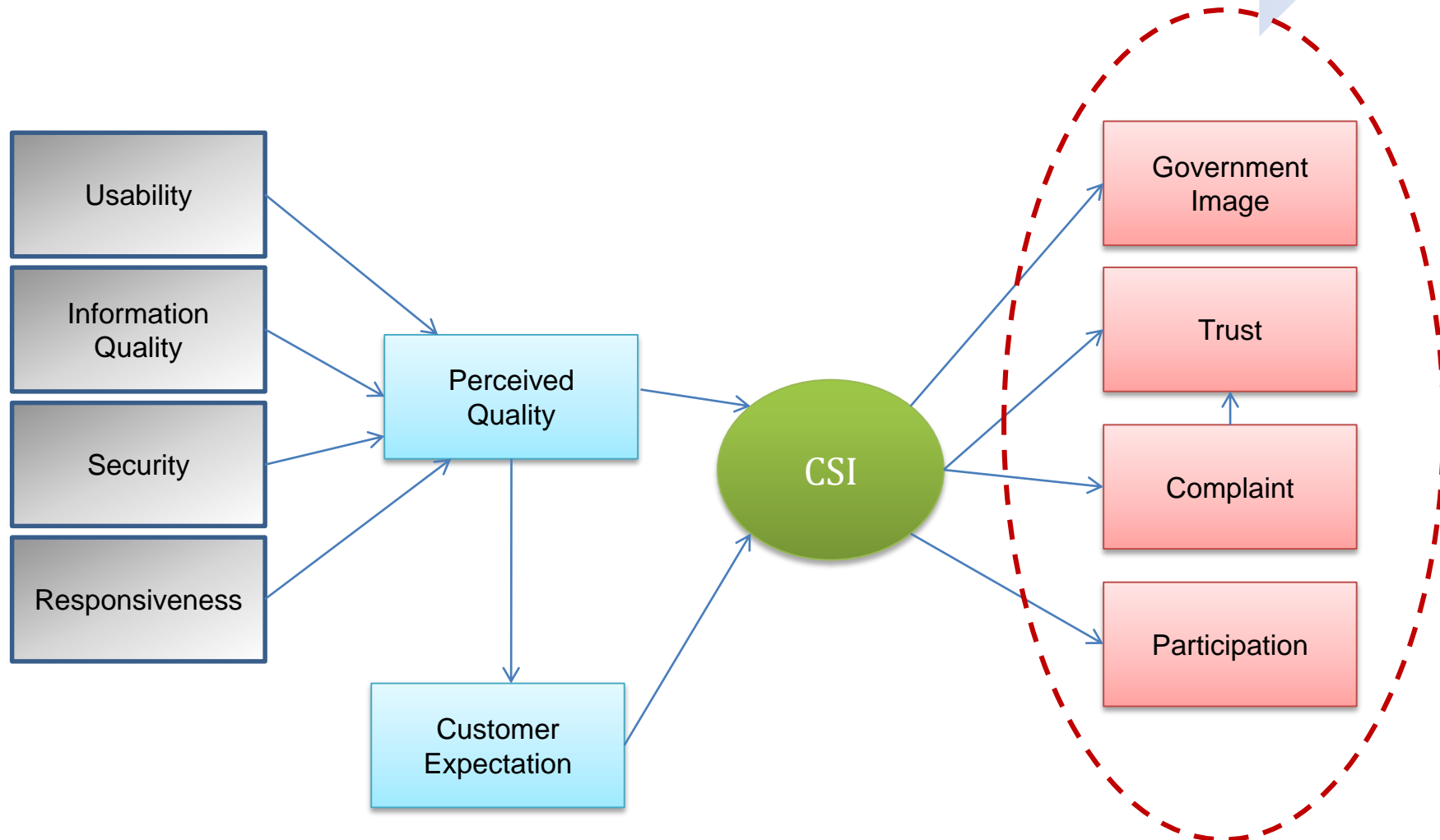
AGGREGATE RESULTS – BUSINESS

Factors measuring Perceived Quality

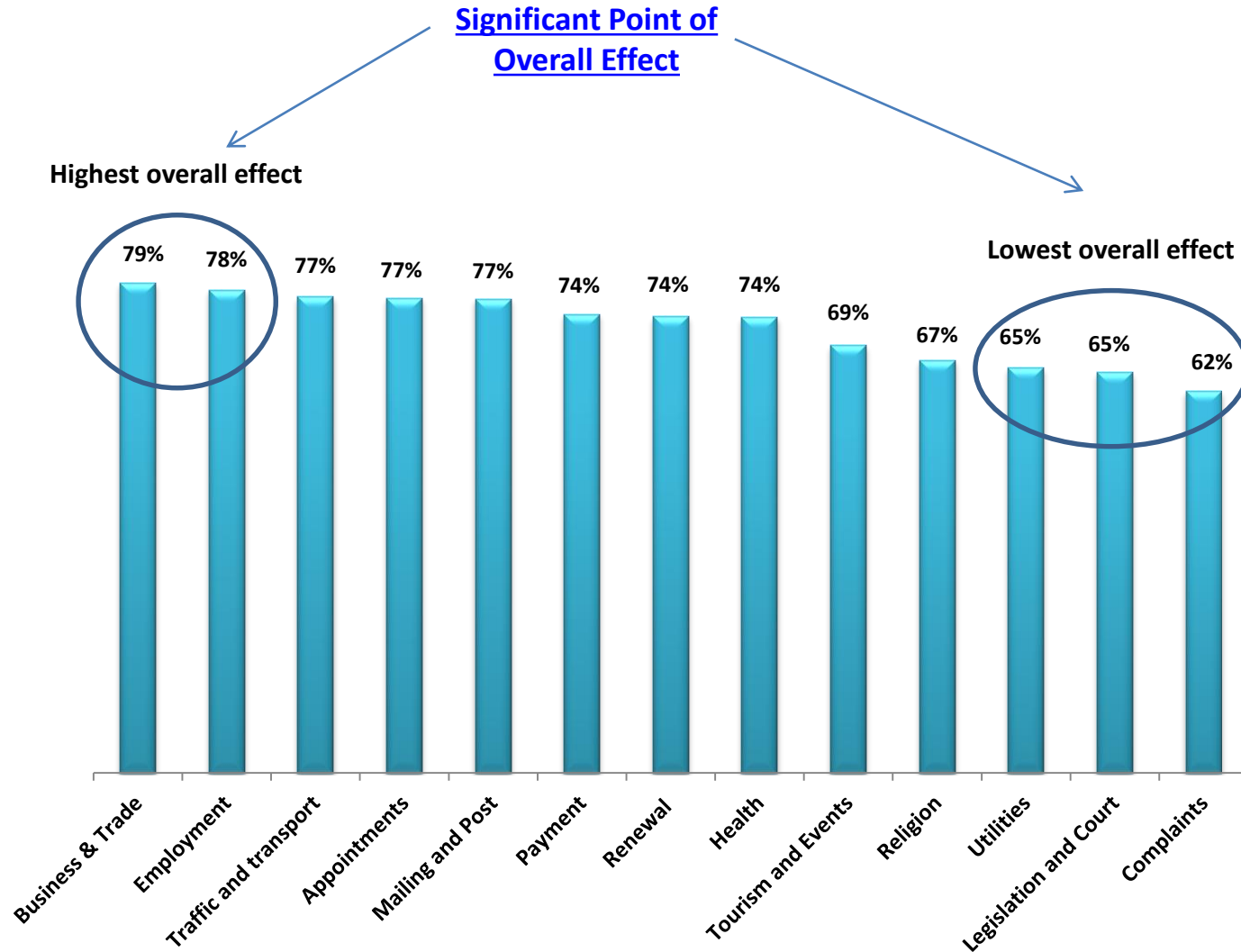


Weakness mostly in usability

IMPACT / EFFECT



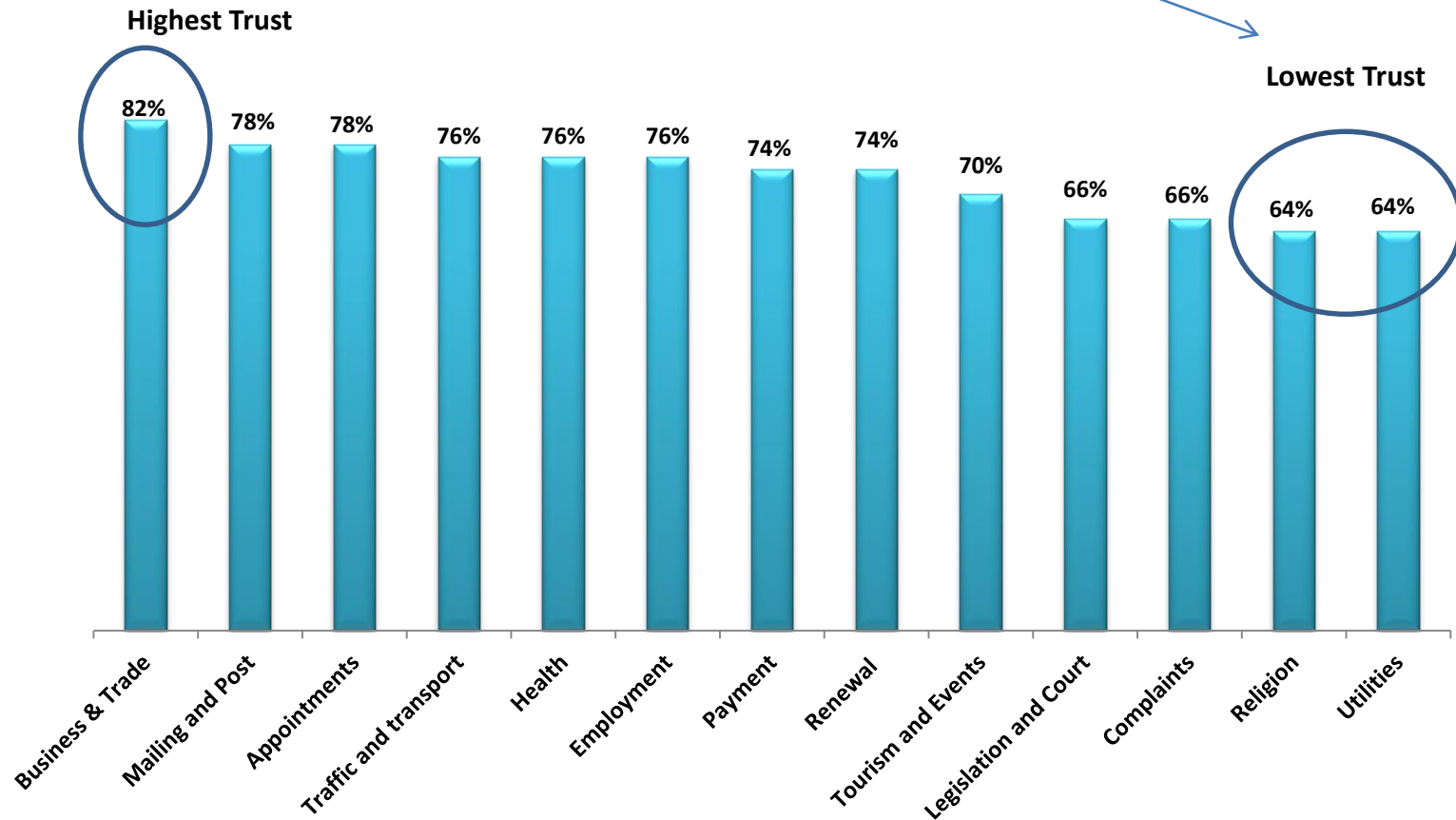
OVERALL EFFECT – BUSINESS



AGGREGATE RESULTS – BUSINESS

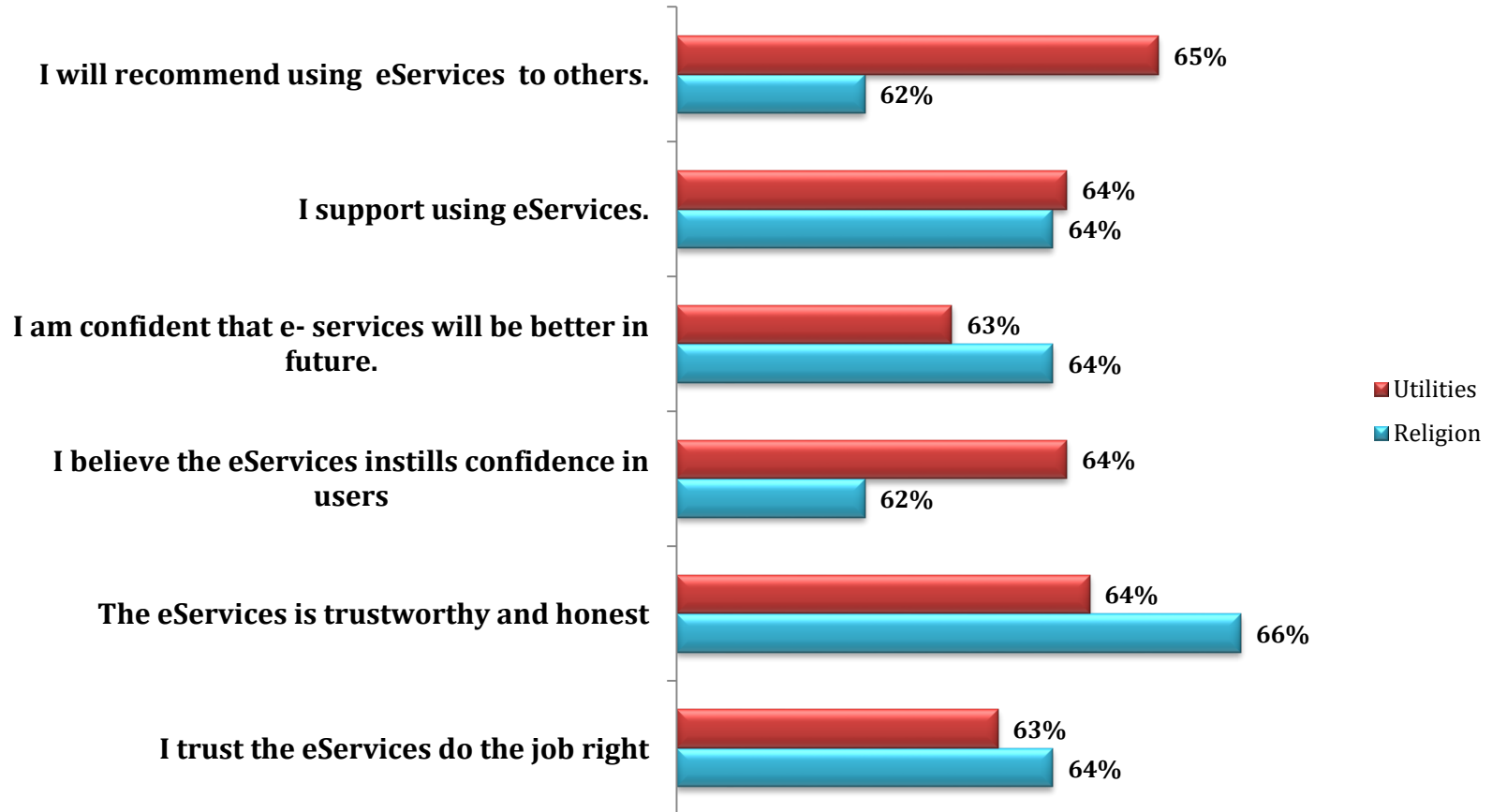
Satisfaction Effect Indicator (Trust)

Significant Point of
Trust



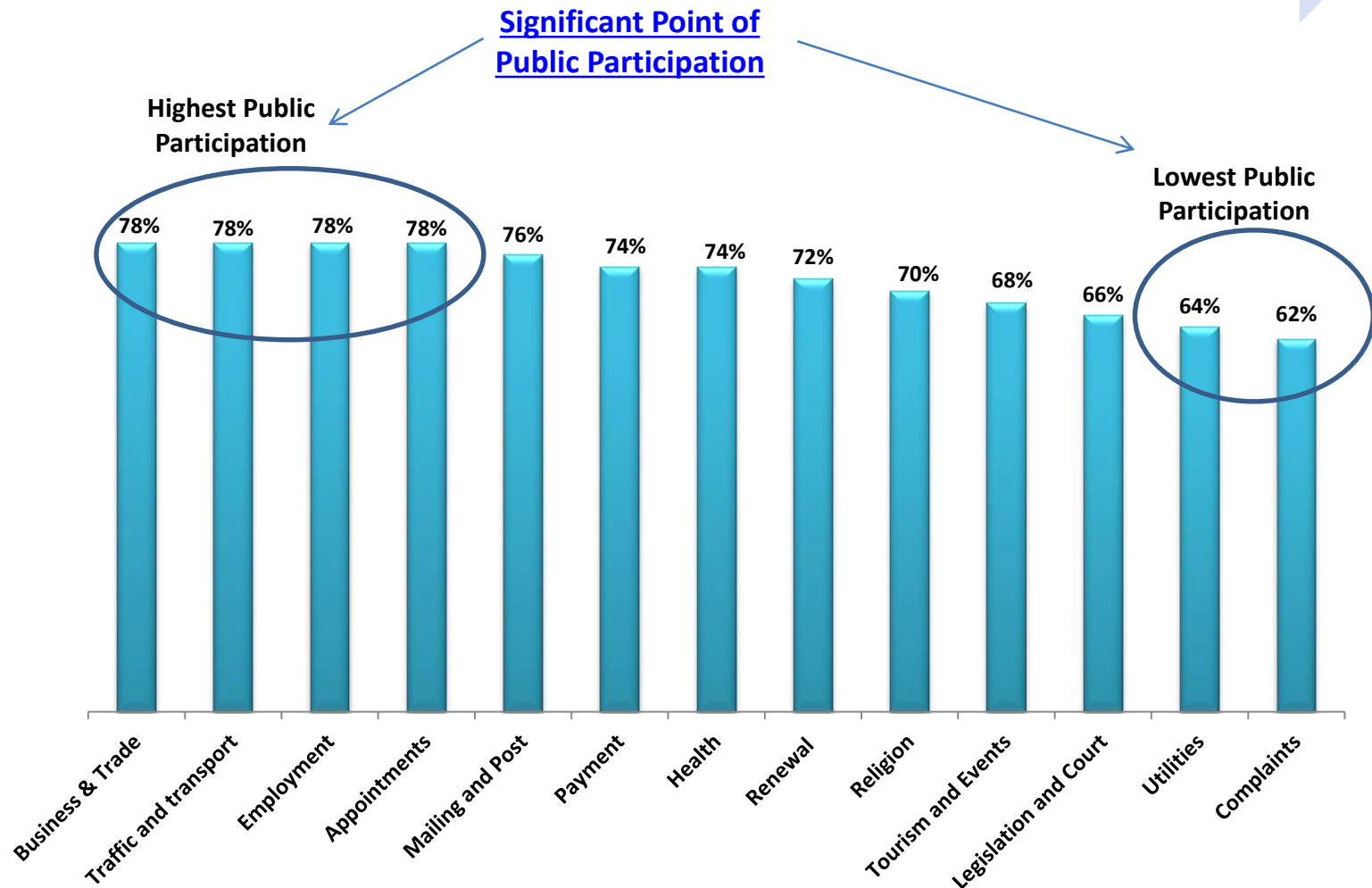
TRUST

Religion and Utilities eServices



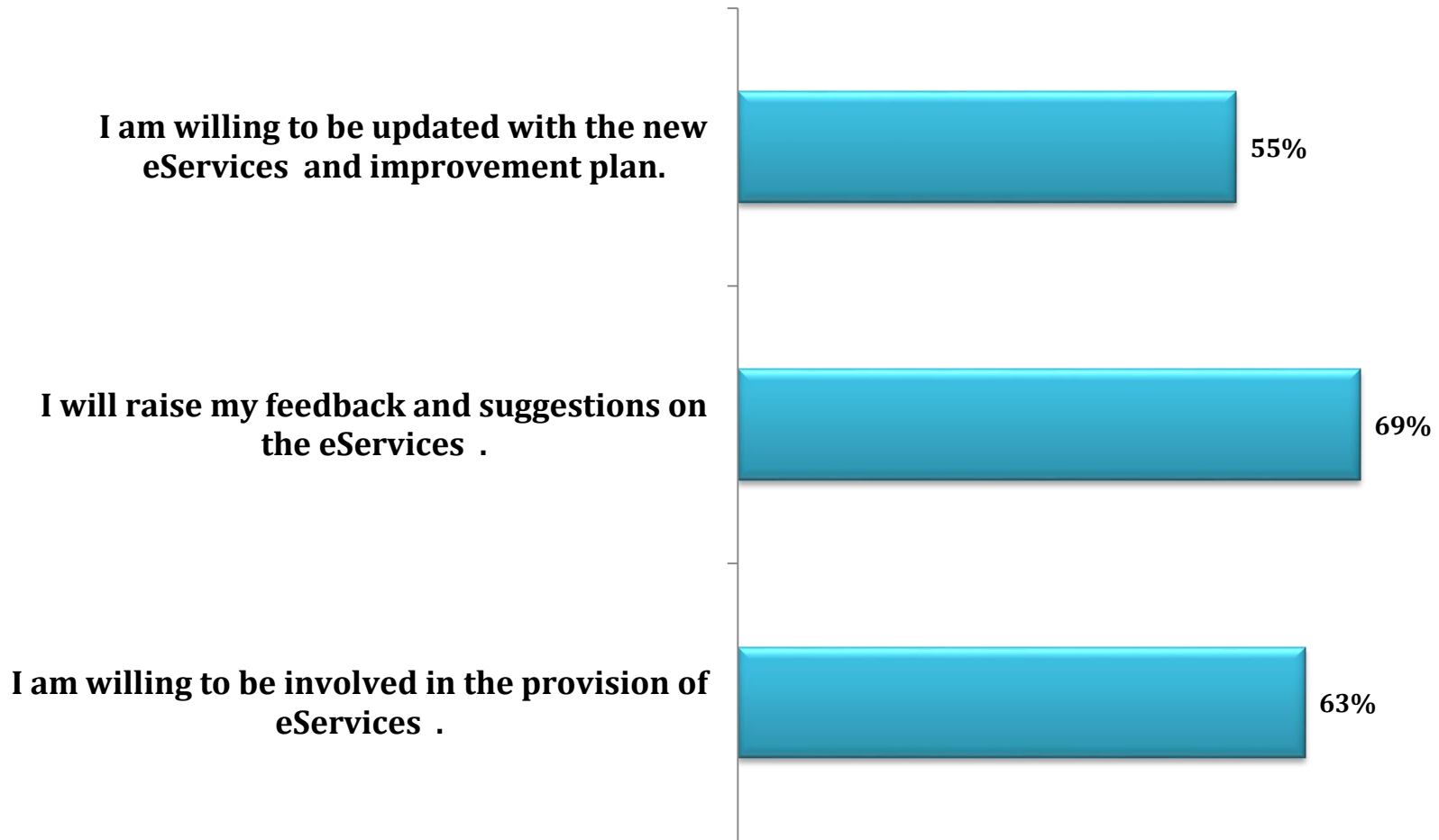
AGGREGATE RESULTS – BUSINESS

Satisfaction Effect Indicator (Public Participation)



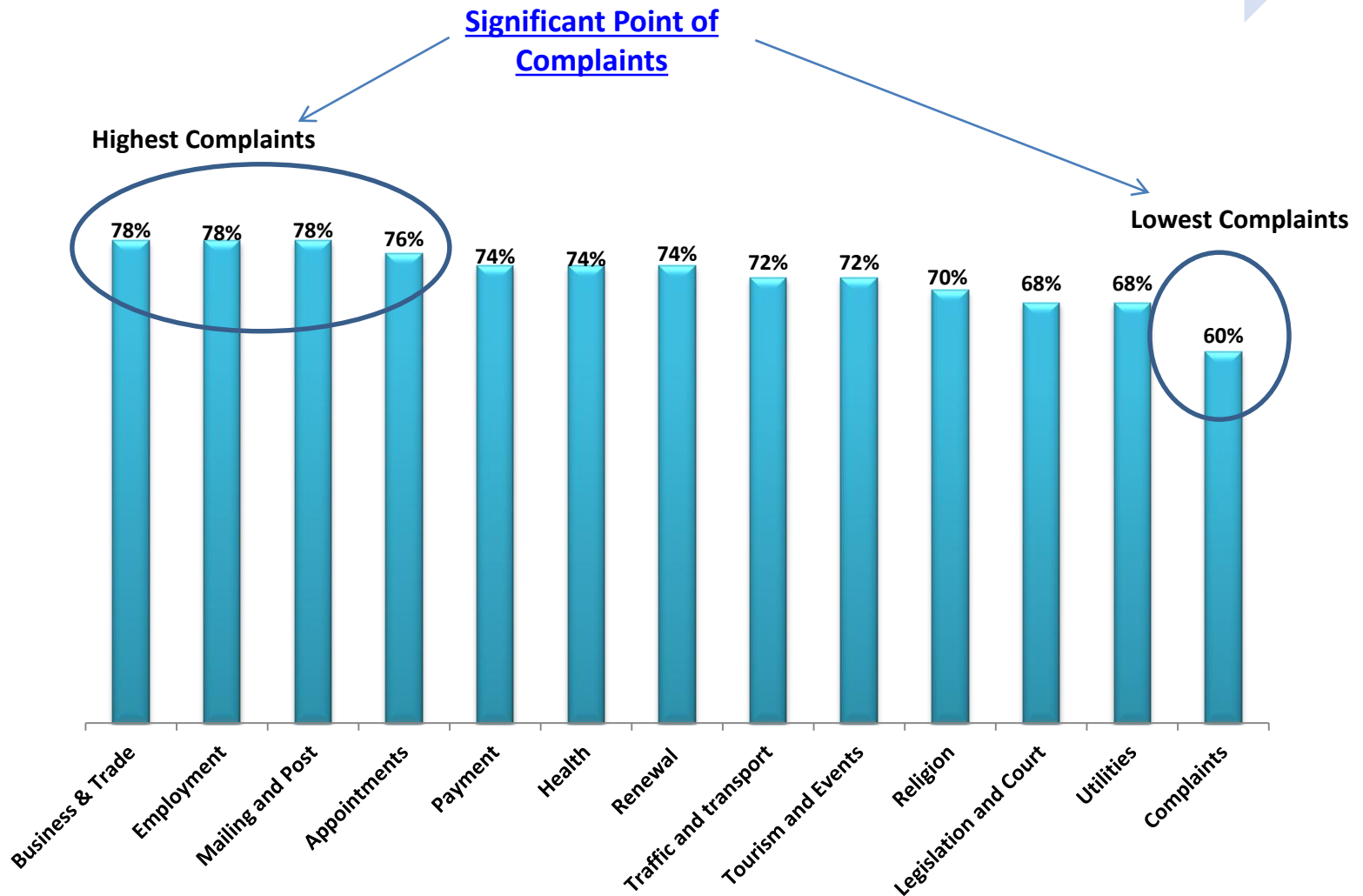
PUBLIC PARTICIPATION

Complains eServices



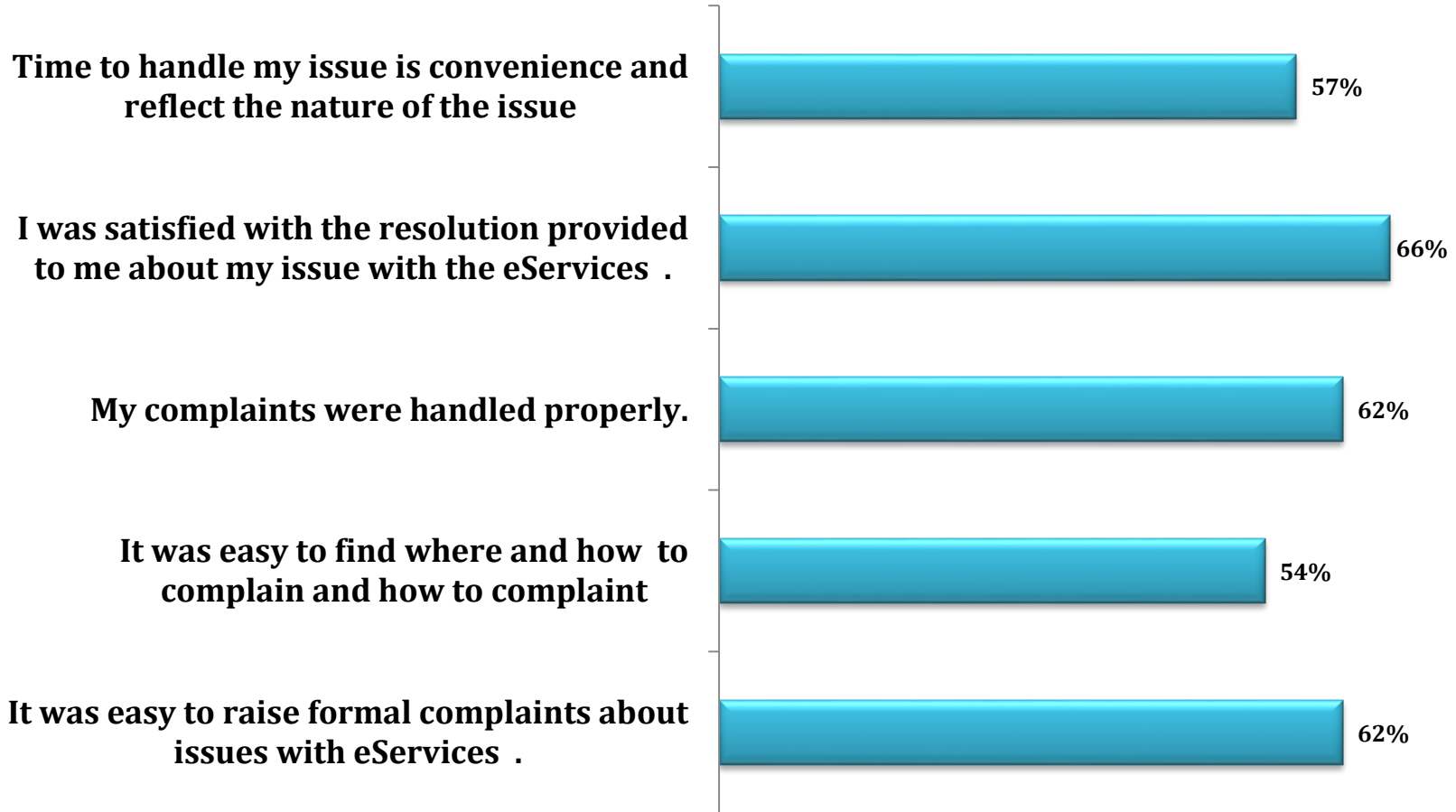
AGGREGATE RESULTS – BUSINESS

Satisfaction Effect Indicator (Complaints)



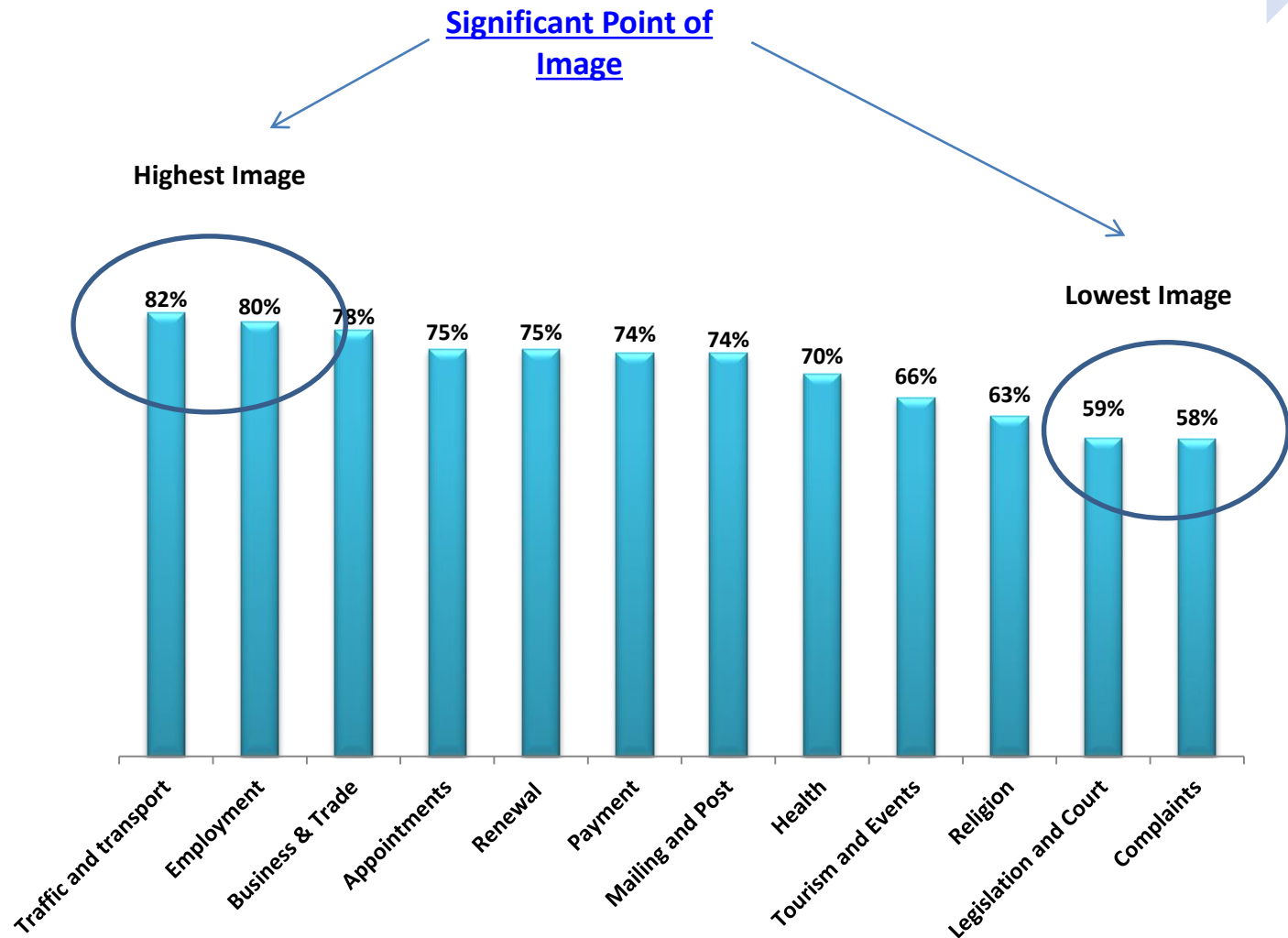
COMPLAINT

Complaints eService



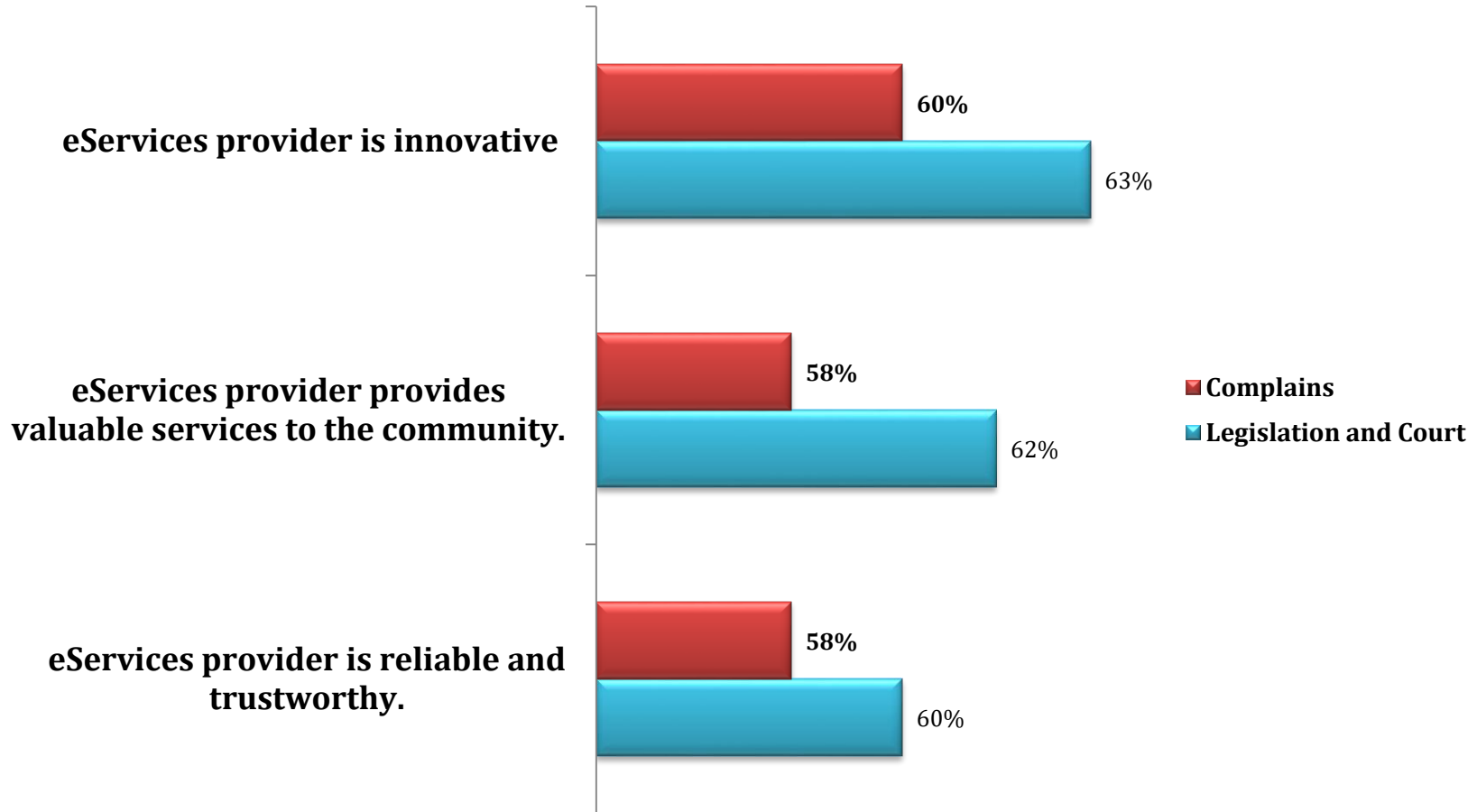
AGGREGATE RESULTS – BUSINESS

Satisfaction Effect Indicator (Image)



IMAGE

Complains and Legislation and Court eServices



DESCRIPTIVE ANALYSIS

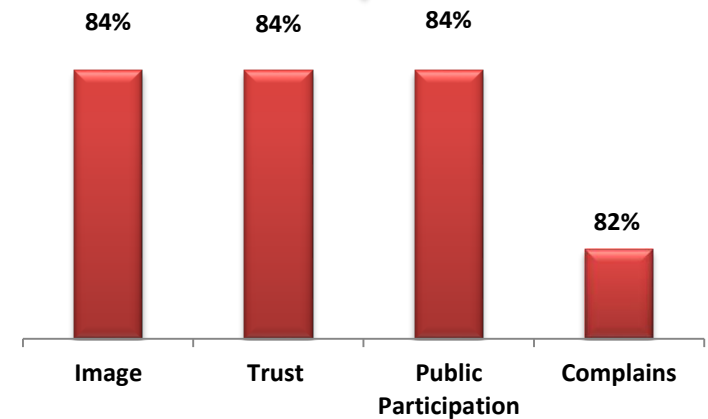
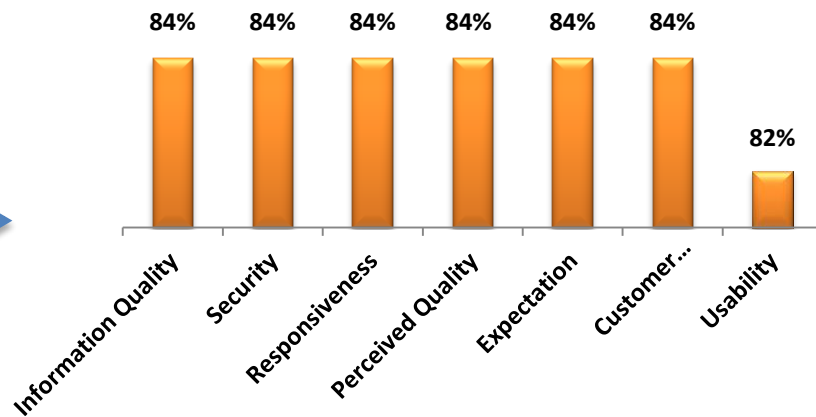
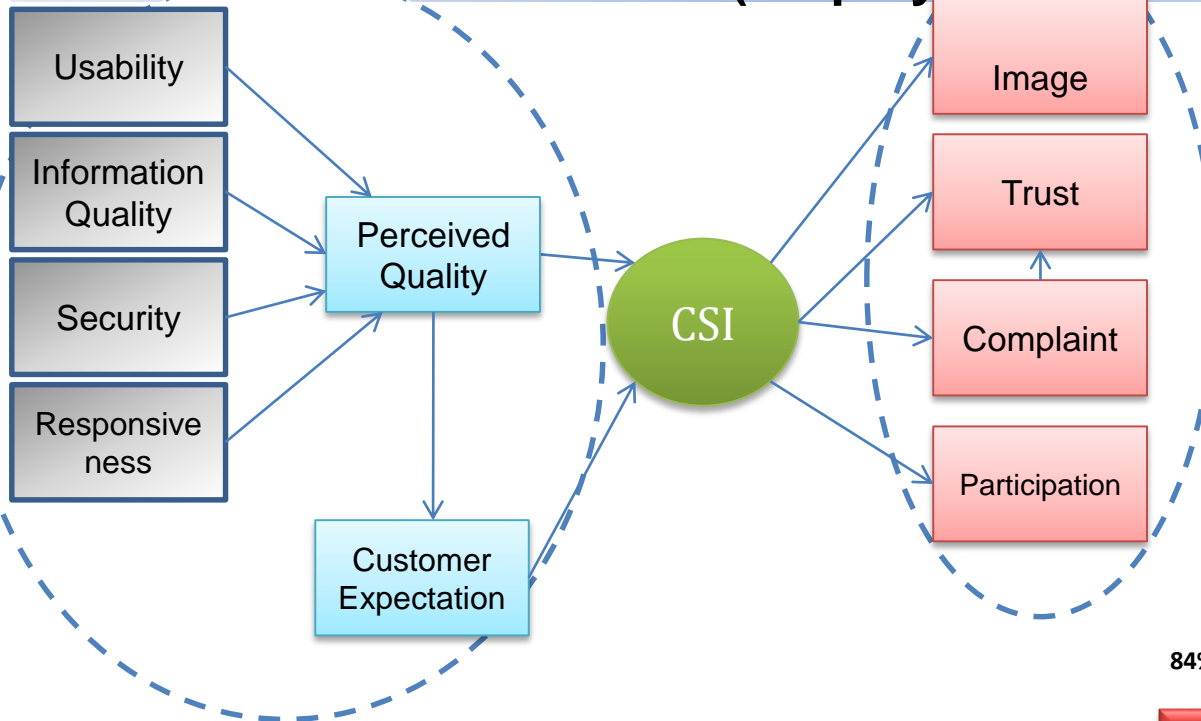


GOVERNMENT



AGGREGATE RESULTS – GOVERNMENT

Customer Satisfaction % (Employment and Training) Category





SATISFACTION-IMPACT MATRIX

MATRIX DEVELOPMENT

- Dimensions of the matrix:
 - The overall effect calculated by average of four factors (Image, Trust, Public Participation and Complaints)
 - The overall average of the satisfaction elements.
- The matrix will help to direct the iGA towards the proper action on each eService based on their position on the matrix.

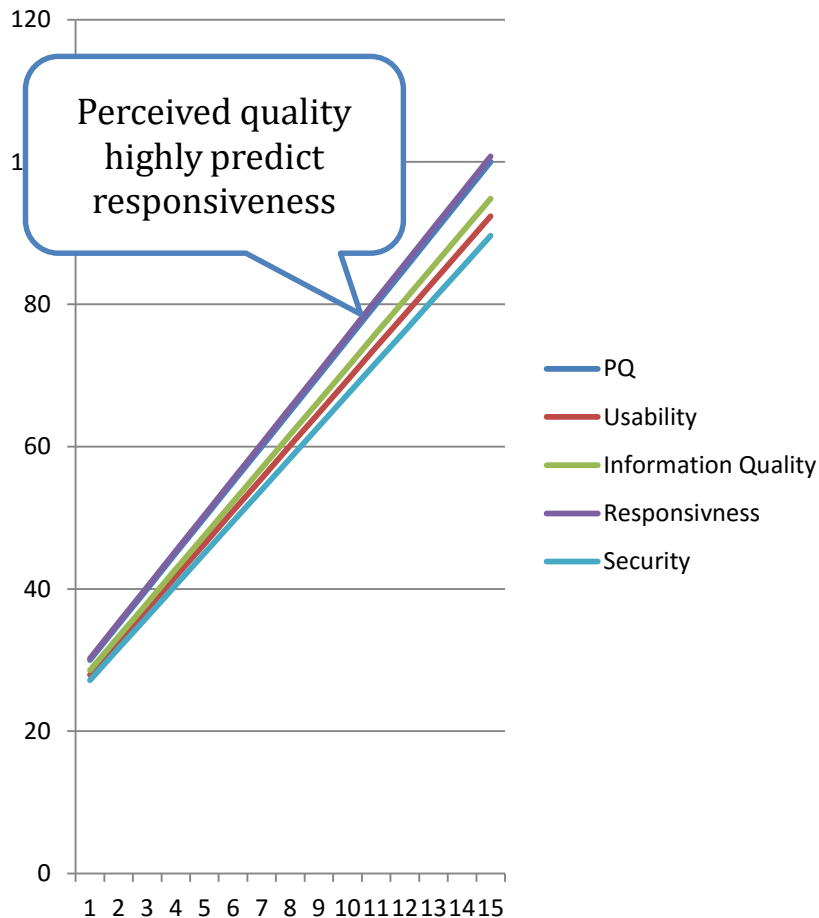
SATISFACTION-IMPACT MATRIX



STRATEGIC ACTION

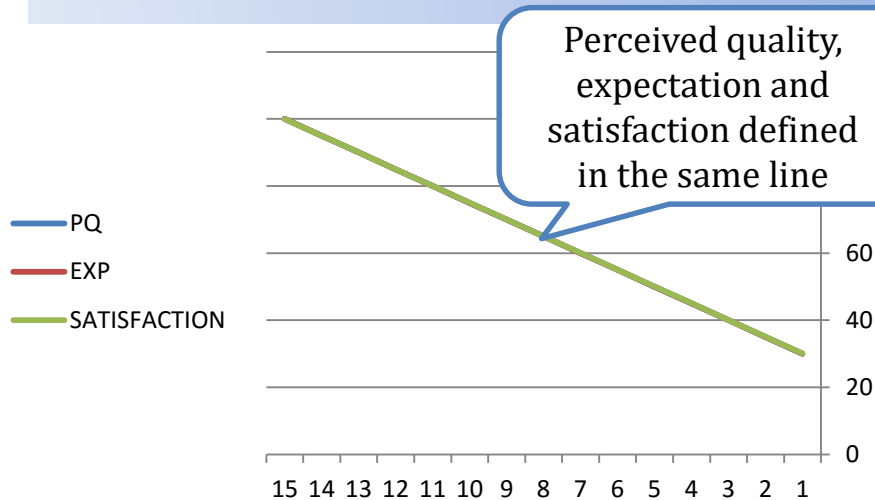
- ❑ **Focus:** iGA should emphasize heavily on e-Services on this quadrant as it has both high effect on Government and high satisfaction with eServices. iGA should maintain its level or leverage it to be considered as an ideal model for other eServices.
- ❑ **Improve:** Individuals perceived high importance and effect of these eServices regardless of the low quality of them. Therefore, iGA should pay more efforts in improving the quality considering the usability, information quality, security and public responsiveness.
- ❑ **Monitor:** iGA is providing high quality of such eServices regardless of its low effect. Therefore, iGA needs to study the importance and effect of such eServices on the Government and society.
- ❑ **Reconsider:** iGA should review and re-examine the eServices on this quadrant for either removing or improving for a better effect and satisfaction.

FACTORS OF FOCUS! (**PERCEIVED QUALITY**)

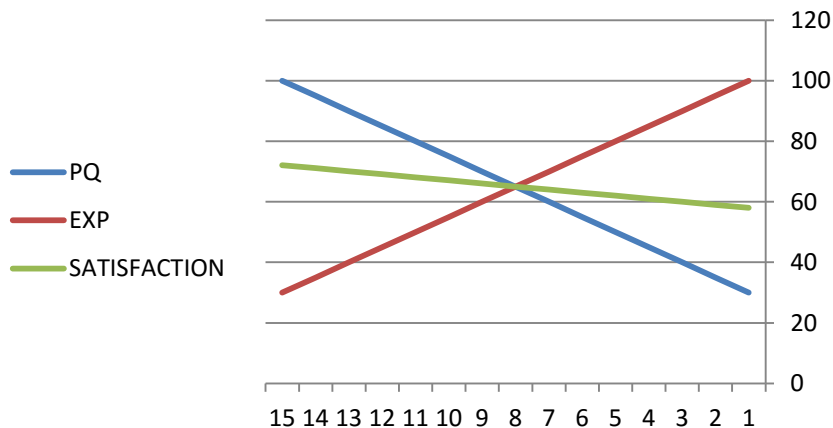


- Responsiveness should be the focus to assure a high perceived quality
- While Security and Usability are very important, they can not assure a high perceived quality.

FACTORS OF FOCUS! (SATISFACTION)

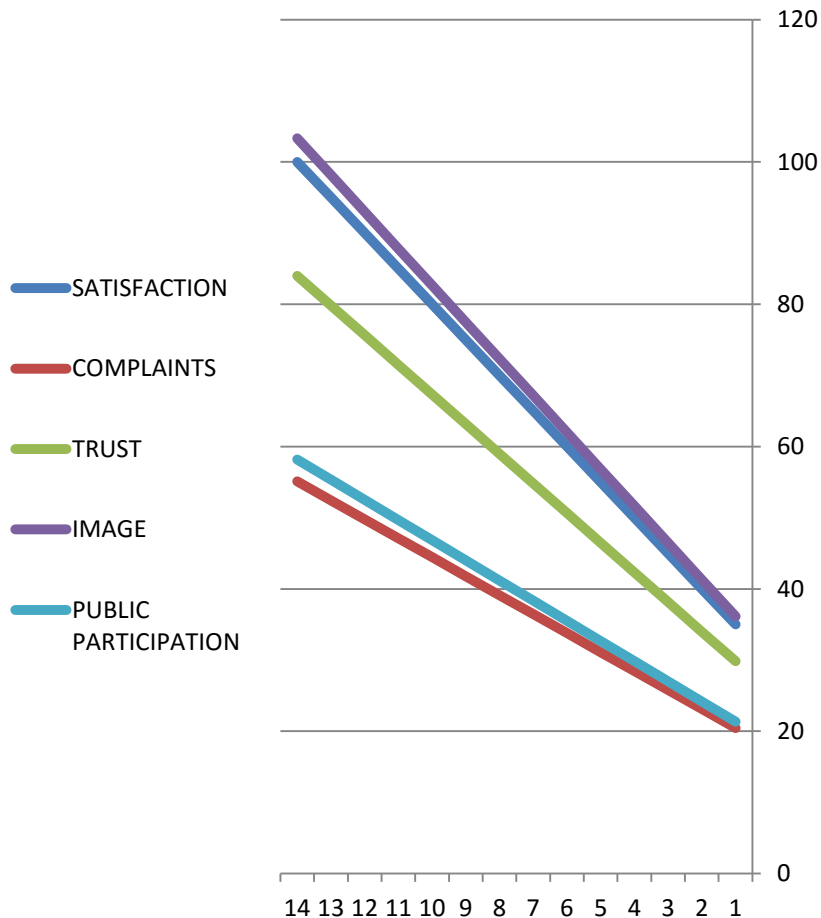


- Satisfaction is strongly predicted by eService quality and customer expectation.



- If any factor decrease will cause a sharp decrease on satisfaction.

FACTORS OF FOCUS! (EFFECT)



- Achieving high satisfaction can predict high Government image.
- Achieving high satisfaction will not predict a high improvement in public participation or enhancement in trust.

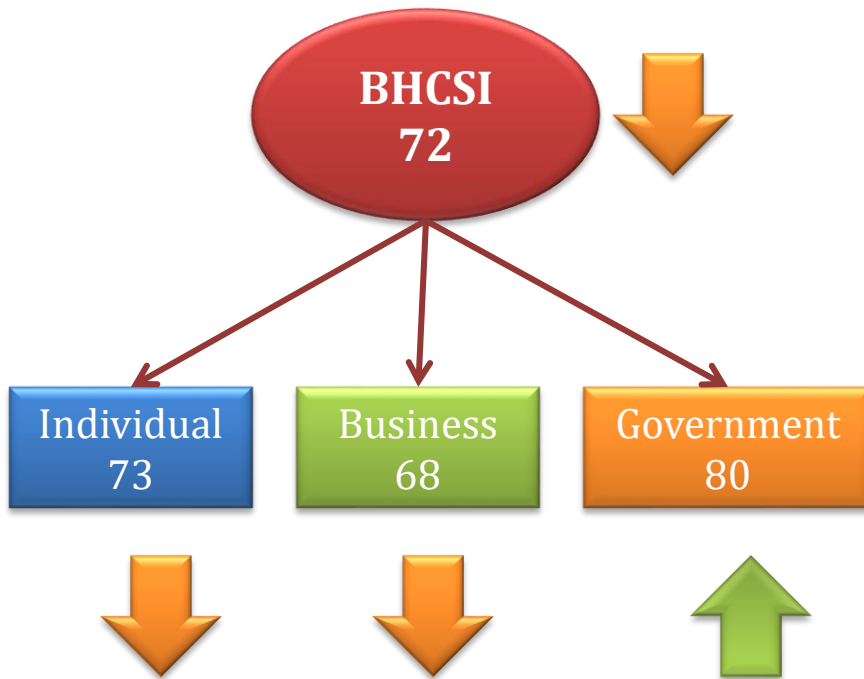


BAHRAIN CUSTOMER SATISFACTION INDEX (**BHCSI**)

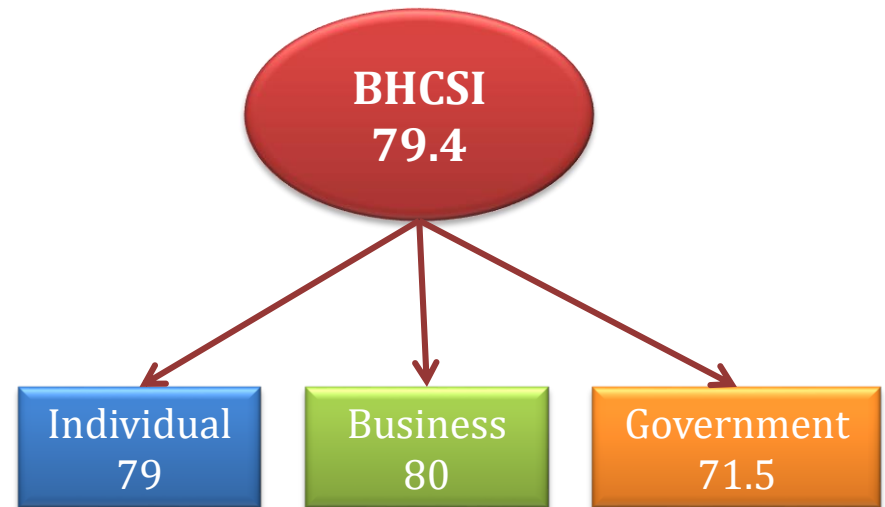


BHCSI

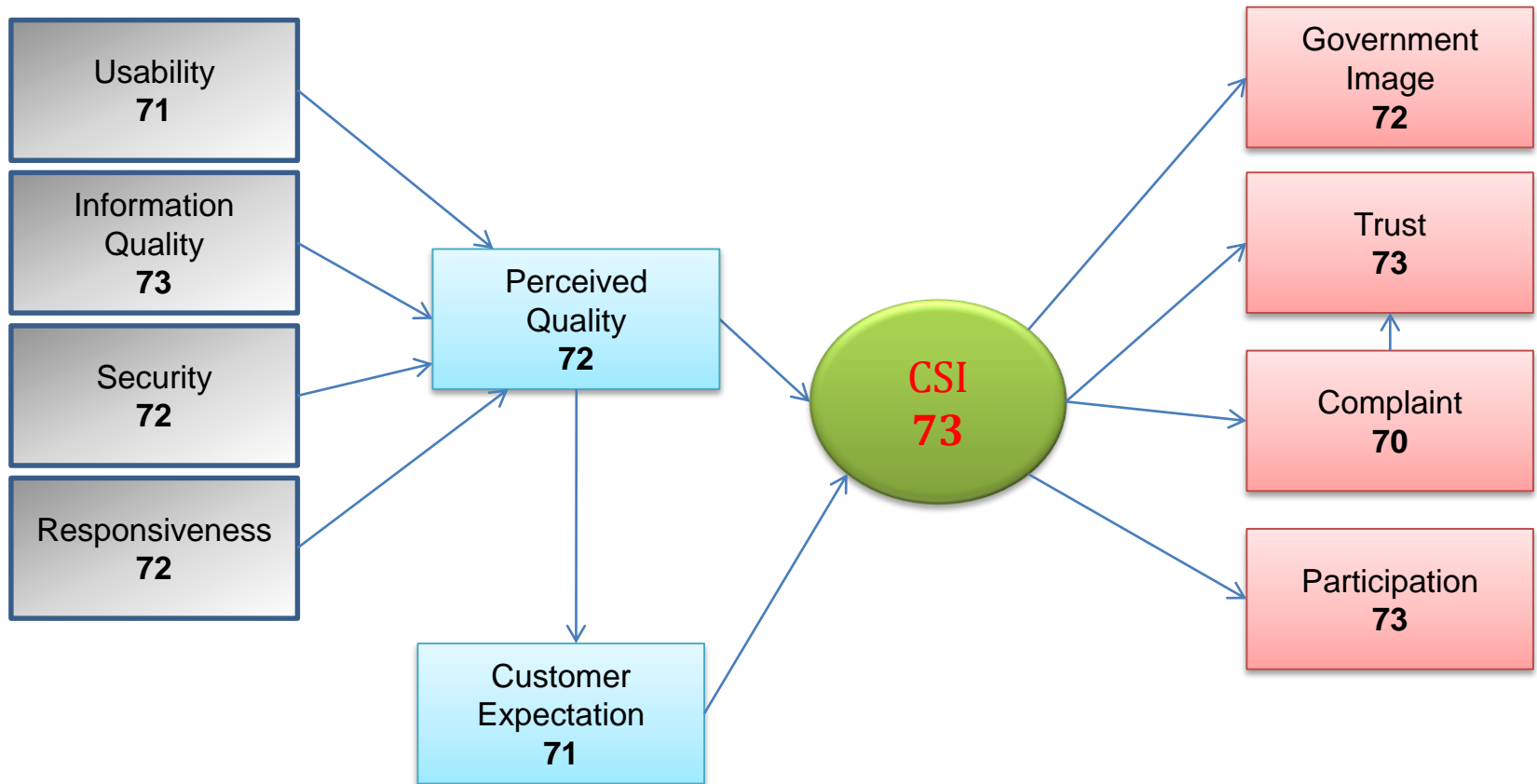
2015



2014



BHCSI (**INDIVIDUAL**)



CSI PER SERVICE CATEGORY - **INDIVIDUAL**

Individual E-services	2014	2015	
Utilities	X	78	Above international average
Traffic and transport	70	77	
Educational	70	74	Close to international average
Appointments	65	73	
Renewal	65	73	
Payment	66	72	
Health	57	72	
Legislation and Court	54	71	
Tourism and Events	64	70	Low satisfaction index
Community Welfare	X	69	
Religion	54	69	
Business & Trade	X	68	
Employment	56	68	
Housing and Property	X	68	
Mailing and Post	56	67	
Complaints	66	66	

CSI FOR ESERVICE CATEGORY

Educational
74

Utilities
78

Legislation
71

*Traffic and
transport*
77

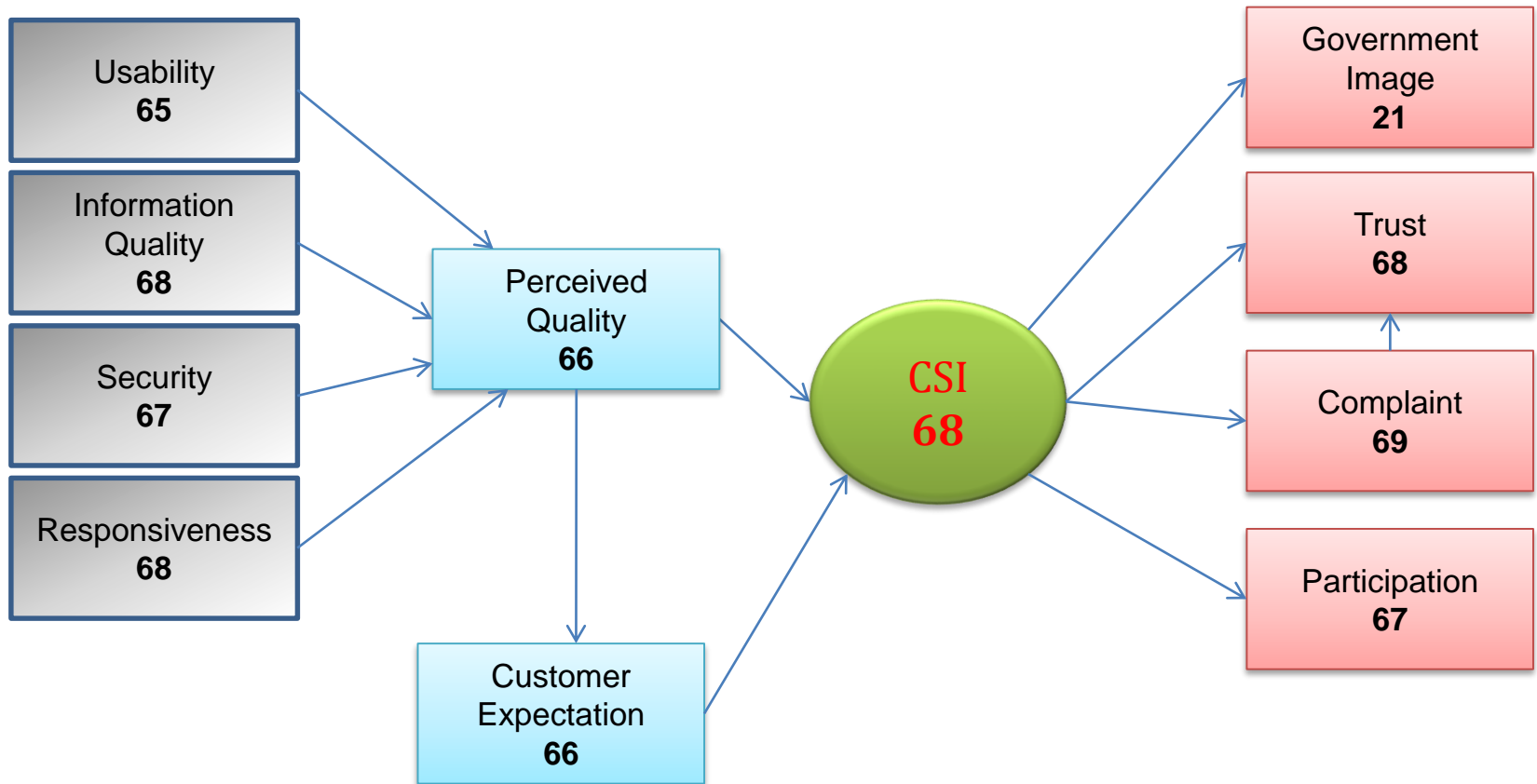
Appointments
73

Health
72

*Tourism
and Events*
70

*Mailing
and Post*
73

BHCSI (**BUSINESS**)



CSI PER SERVICE CATEGORY – BUSINESS

Business E-services	2014	2015	Above international average
Business & Trade	X	75	
Appointments	X	73	
Health	56	70	
Mailing and Post	62	70	
Payment	79	68	
Traffic and transport	X	67	
Tourism and Events	69	62	
Utilities	X	58	
Religion	51	-	
Complaints	45	-	
Legislation and Court	51	-	
Renewal	X	-	
Employment	89	-	

CSI FOR ESERVICE CATEGORY

Appointments
73

*Business &
Trade*
75

Payment
68

*Traffic and
transport*
67

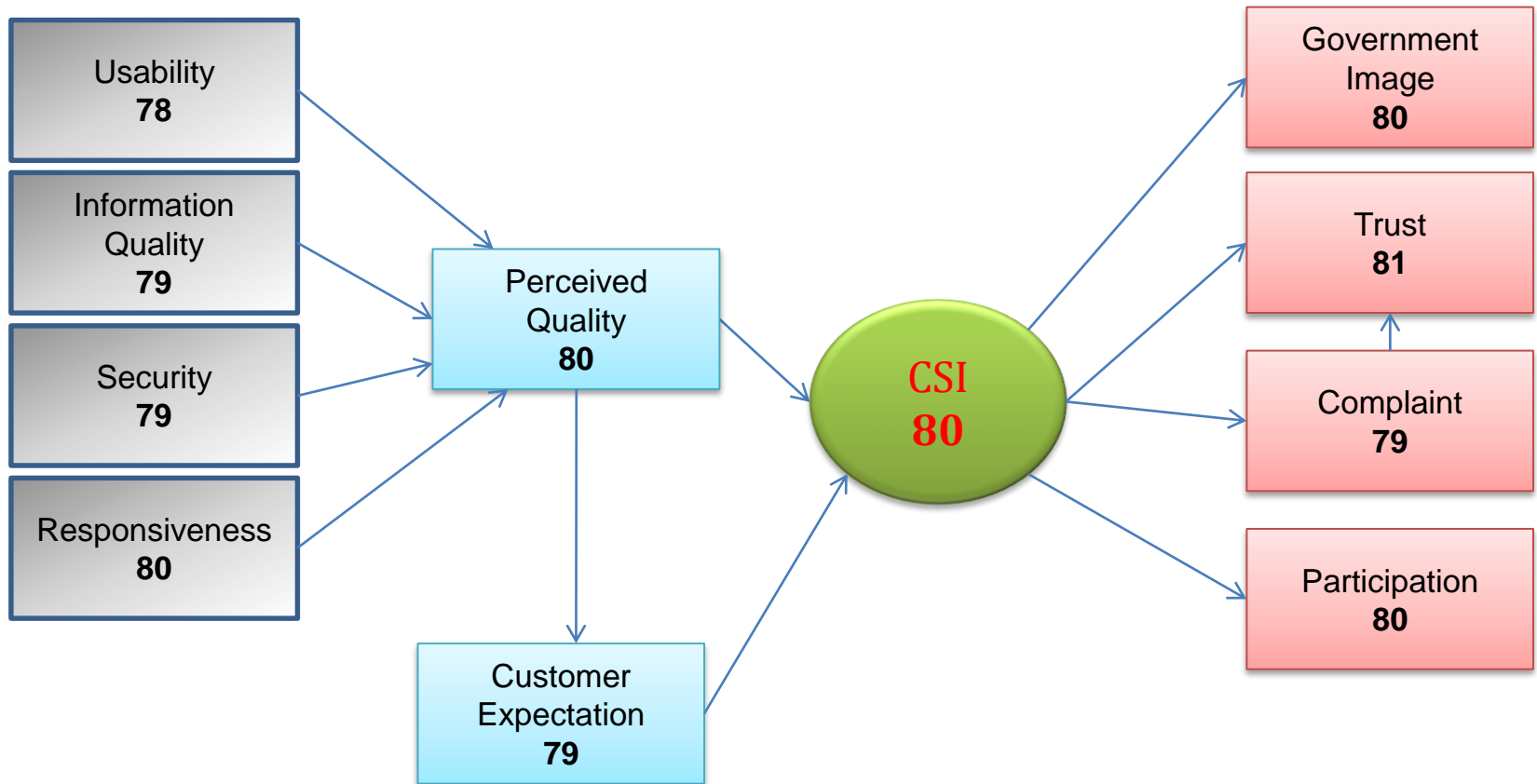
Health
70

*Mailing
and Post*
70

*Tourism
and Events*
62

Utilities
58

BHCSI (GOVERNMENT)



CSI PER GOVERNMENTAL ENTITY



RESEARCH GROUP

Strategic Decision Support Studies (SDSS) Research Group Members

Dr Ali Al-Soufi
Project Manager

aalsoufi@uob.edu.bh

Dr Jafla Al-Ammari
Lead Researcher

alammari@uob.edu.bh

Dr Reem Al-Kabbi
Researcher

ralkaabi@uob.edu.bh

Dr Hayat Ali
Researcher

hali@uob.edu.bh

Dr Amal Alrayes
Researcher

aalrayes@uob.edu.bh