

# IT Personnel Inflow

**Stats Term Project**

# Team Members

- Asad Mustafa
- Jawad Mansoor
- Muhammad Adil Siddiqui
- Ghulam Khaliq

# Motivation

- Personal experiences
- Observations around the work place
- Ever increasing number of Graduates in IT field



- This area specifically needs attention due to a variety of reasons ,
1. Saturation in IT field
  2. Reforms to boost up the quality of IT personnel as per Global level.
  3. Need for Industry oriented syllabi of Institutes for both Computer sciences department and others

# Literature Reference

- No specific work done in similar domain
  - The main source 'Pakistan Education Statistics' is specific to logistics and are not Subject specific.
- 
- Some statistics revealed,
    1. 59/113 (2016) and 73/127 (2017) are placed in IT sector from BSEE batch at FAST-NU.
    2. At NETSOL Technologies, 29% resources working in Software Development positions have bachelor degrees other than BSCS, BSIT and BSSE.





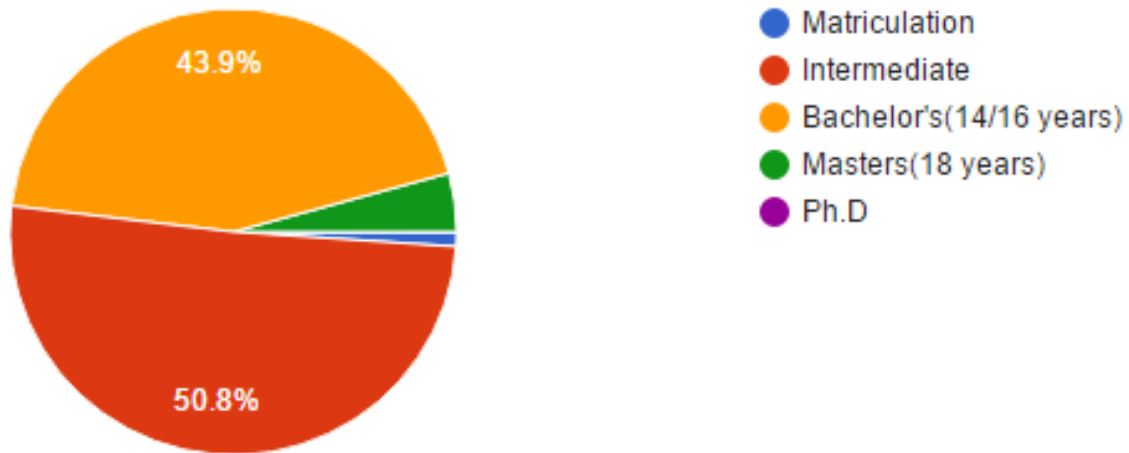
Tracking Education path	Professional Indicators	Gauging satisfaction levels
1. What is your last completed education?	1. Are you working in Information Technology field?	1. Are you happy with your decision to choose IT as Career? Ordinal 1-5
2. What is the domain of your bachelor's degree? Ex. BSCS, BSIT, BSSSE, BSEE or others	2. If working in IT, what are the main reasons to join the field? Ex. Personal Interest, Scope/Trend, Attractive salary packages, Business ventures e.t.c.	2. If you have opportunity to switch to different field with same packages and perks, will you? Yes/No
3. What was your major in Matriculation/O-level? Ex. Math, BIO, Computer Science, Commerce etc.	3. Which options describe your Current position at workplace? Ex. Software Developer, System Architect, DB Administrator/ Developer, BA, QA e.t.c.	
4. What was your major in Matriculation/O-level? Ex. Math, BIO, Computer Science, Commerce etc.	4. In which positions you see yourself working in next 5 years? Ex. Developer, Architect, Manager, Consultant, entrepreneur	
5. Motivation in choosing this field? Ex. Personal choice, family/friends, mentor	5. What is the range of your current monthly Gross Income?	

# Research Questions

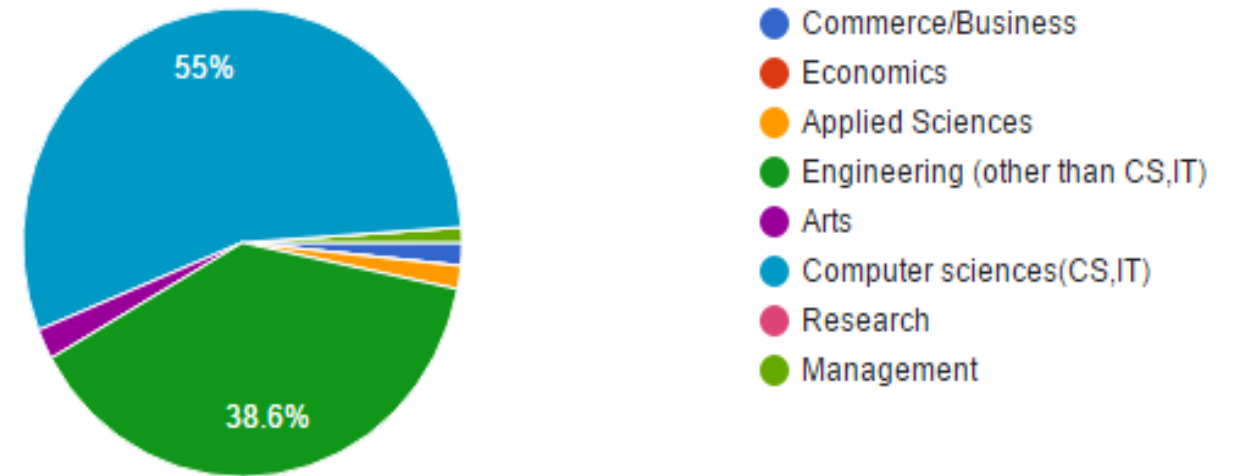
- What are the attraction that IT offers?
- What are the salaries that IT offers to professionals in comparison to other domains?
- Are IT professionals are satisfied with their jobs?
- What is the major motivation to choose career domain?

# Demographics

Current Qualifications



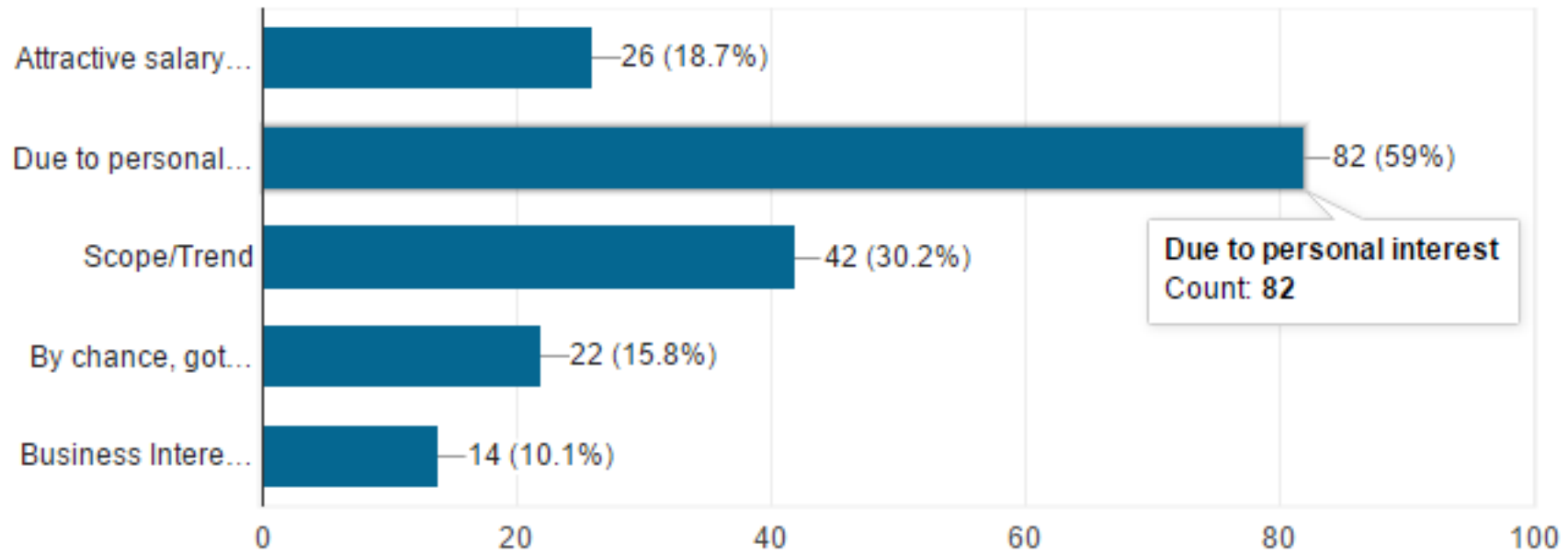
Qualification Domain





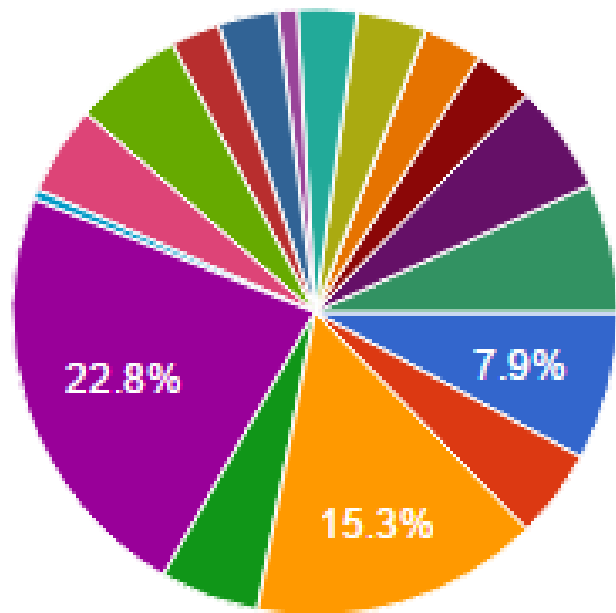
# Demographics

Motivation to join Information technology domain?



# Demographics

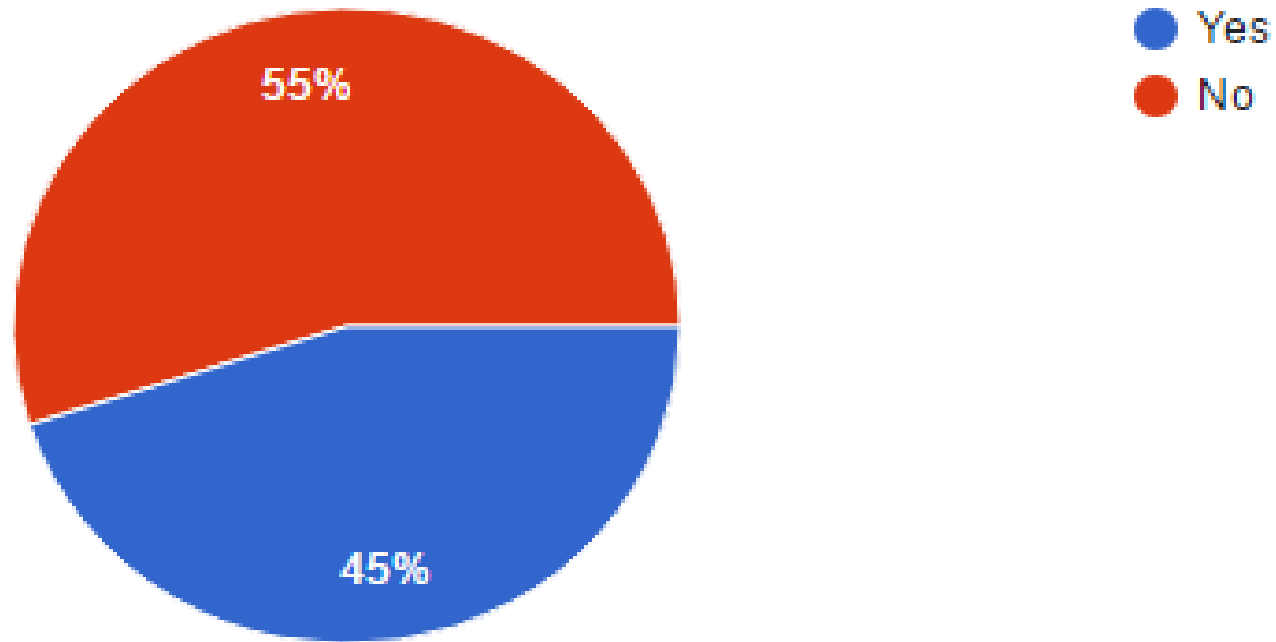
Job nature in Information technology industry?



- Game Development
- Researcher
- Web Development
- Graphic Designing
- Software Development
- Consulting & Systems Integration
- Database Administration/Development
- Networking/Telecommunication

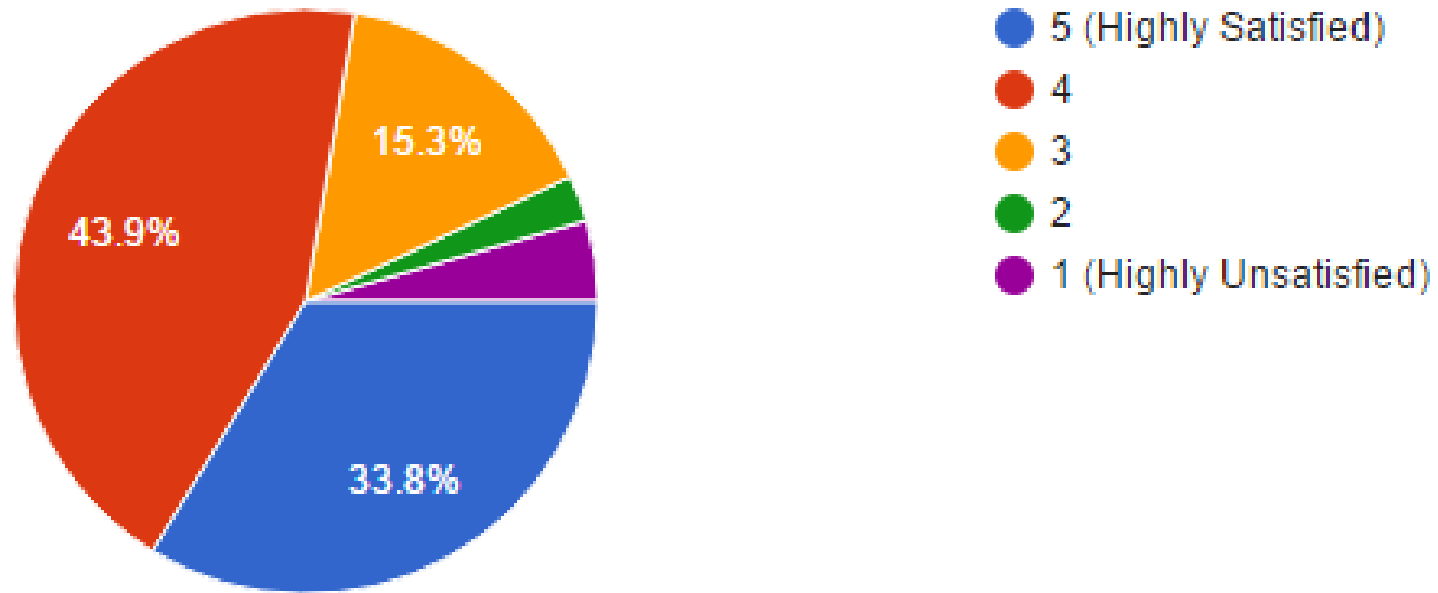
# Demographics

People who are willing to switch to other domain with same salaries/perks?



# Demographics

Satisfaction percentage of IT professionals



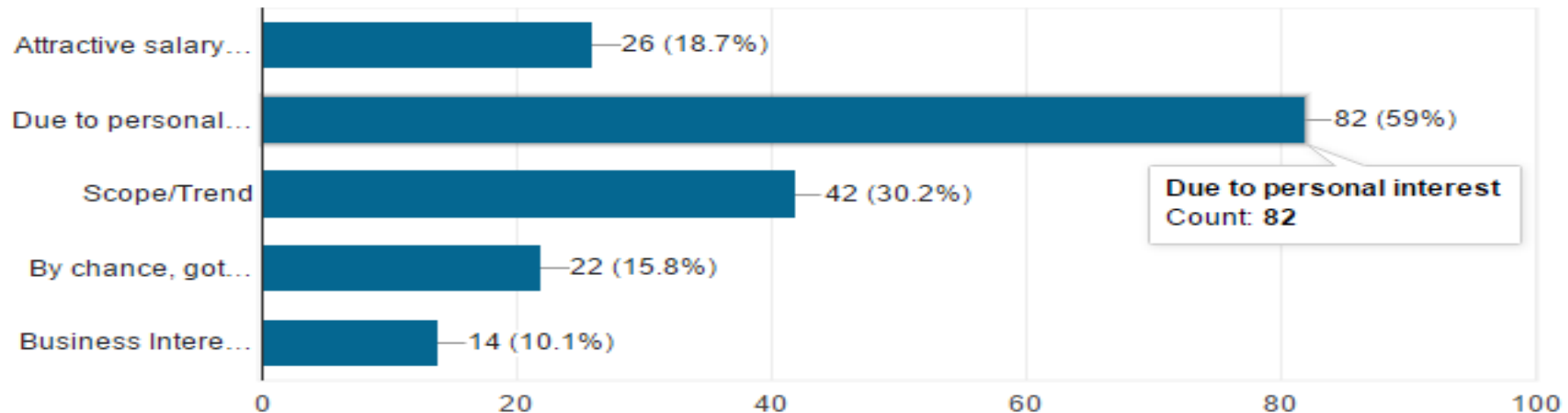
# Hypothesis 1

More people joined IT domain due to salaries rather than personal interest

**H0** = Proportion of people joined IT due to salaries/perks = Proportion of people joined IT due to personal interest

**H1:**  $P1 < P2$

We calculated  $Z(\text{calc})$  using  $\text{Alpha} = 0.05$  and found that value is less than  $Z(\text{tab})$  so we reject our null hypothesis and it is also clear from demographics.



# Inference about population

We calculated confidence intervals for both proportions representing their populations.

**People who selected IT due to salaries:**

$$0.118 < p < 0.24$$

**with 95% accuracy**

**People who selected IT due to personal interest:**

$$0.505 < p < 0.67$$

**with 95% accuracy**

# Hypothesis 2

People having pure CS/IT background are more successful?

**H0** = Difference of means of salaries of class who joined IT with pure IT background and of non-pure IT =  $\mu_1 - \mu_2 = 15k$

**H1:**  $\mu_1 - \mu_2 > 15k$

How we test it?

We have asked for salary ranges in questionnaire, We calculated mid points and constructed frequency distribution table, after we calculated samples standard deviations  $s_1$  and  $s_2$

**We applied T-distribution assuming that variances of salaries are unknown and unequal. Our null hypothesis rejected based our calculations.**

# Inference about population

We calculated confidence intervals of means of salaries for both samples representing their populations.

**People having pure IT background salaries:**

**92k <  $\mu$  < 188k** **with 95% accuracy**

**People not having a pure IT background salaries :**

**118k <  $\mu$  < 143k** **with 95% accuracy**



# Hypothesis 3

IT professionals have above 4 satisfaction rate?

**H0** = Average of satisfaction is  $\mu = 4$

**H1:** Average of satisfaction is  $\mu > 4$

**How we test it?**

We have values in range 1-5. We calculated mid points and constructed frequency distribution table

**We applied T-distribution and found calculations rejecting our null hypothesis.**

# Inference about population

We calculated confidence interval of satisfaction rate representing its populations.

**How happy IT professionals are:**

**4.23 ± 0.198**

**with 95% accuracy**

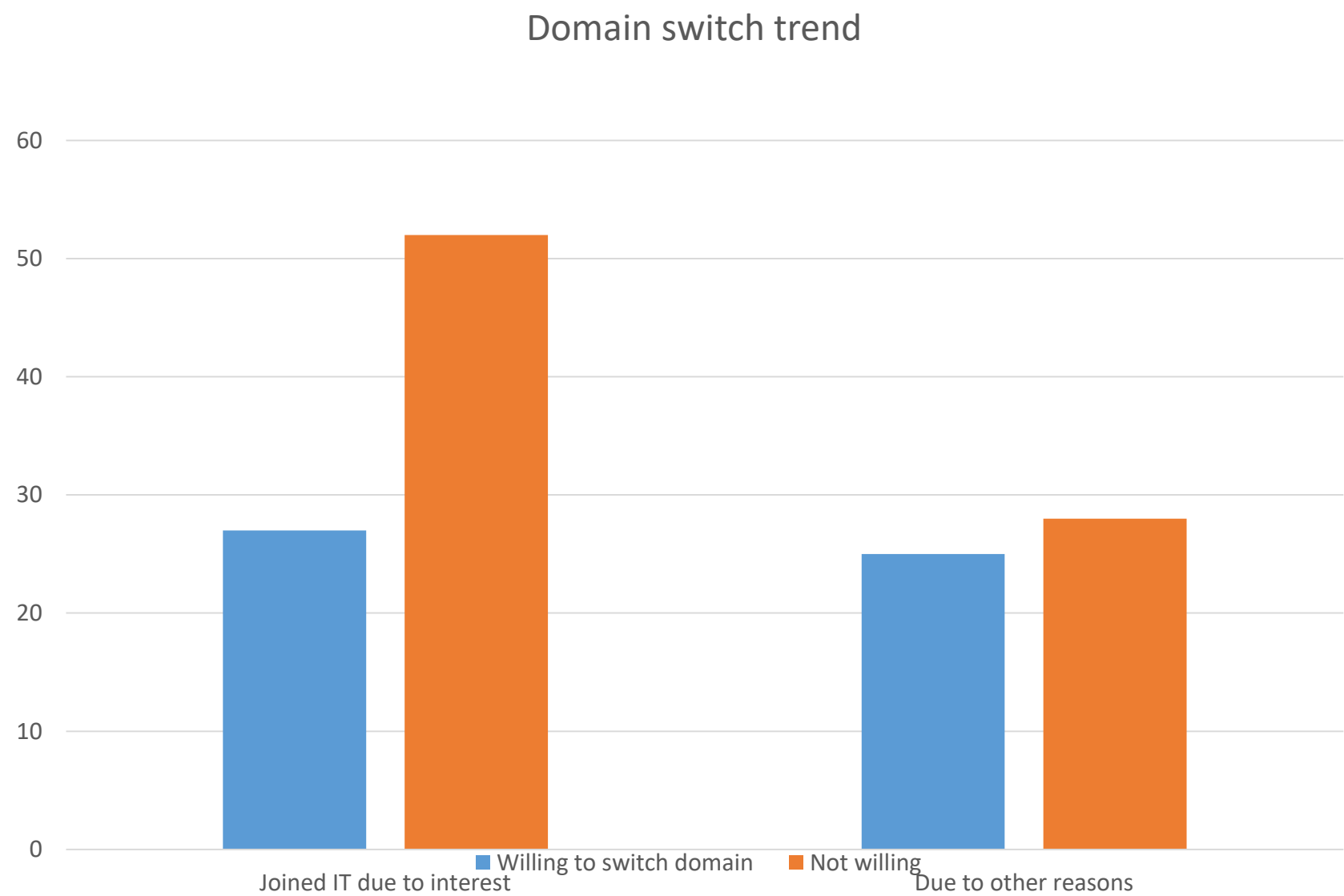
# Interesting facts

People joined IT due to personal interests and willing to switch to other domain  
proportion =  $27 / 132 = 0.204$

People joined IT due to personal interests and willing to switch to other domain  
proportion =  $25 / 132 = 0.189$

**IT professionals mostly do not willing to switch to other domain.**

# Interesting facts



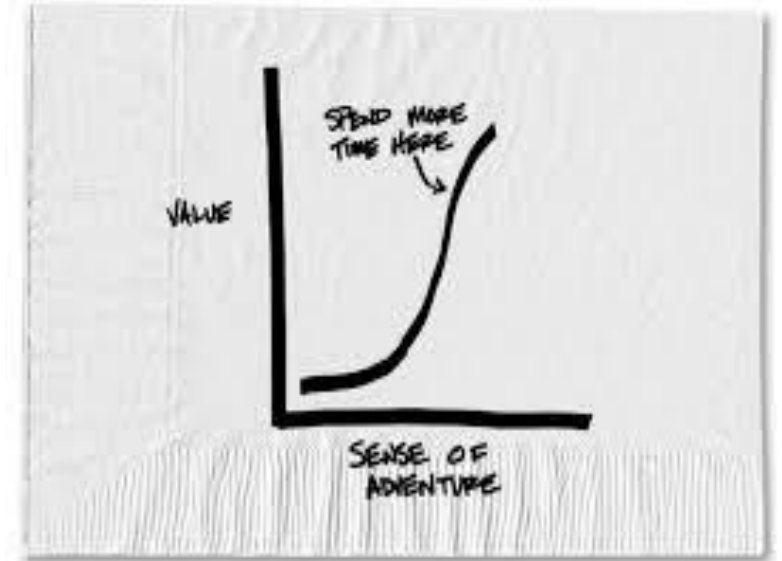
# Conclusions

- Mostly IT professionals have joined the field due to personal interest.
- IT professionals mostly do not willing to switch to other domains.
- Professionals having PURE CS/IT background from matriculation are more successful based on their income. (This can be biased)
- IT professionals are more satisfied with their job with average of 4.23/5

# Future working

- Need to explore the variety of trends
- In order to view a more reflective view, big sample data is required
- Make robust study by including other factors affecting the career choice

Ex. University syllabi, market absorption, distribution of opportunities as per demographics



# Acknowledgements

- Syed Hassan Imran, Manager HR NETSOL Technologies Ltd.
- Aqsa Sarfraz, Placement officer at FAST-NU.
- All respondents of questionnaire.