CHAPTER I

WHAT IS RESEARCH???

Research: is simply the process of finding solutions to a problem after a thorough study and analysis of the situational factors.

Business research: systematic and organized effort to investigate a specific problem encountered in the work setting, that needs a solution. It comprises a series of steps designed and executed, with the goal of finding answers to the issues that are of concern to the manager in the work environment.

Business research: organized, systematic, data-based critical, objective, scientific inquiry or investigation into a specific problem, undertaken with the purpose of finding answers or solutions to it.

*Yeah, ga usah bingung sama yang namanya mahluk bernama PENELITIAN. Intinya: penelitian itu kan **nyelidikin** suatu **masalah** buat nemuin **solusi**nya. Prosesnya ga jauh beda sama usaha kita nyari kebenaran suatu gossip atau cari info tentang orang yang kita gebet. Bedanya: RISET BISNIS ini harus dikerjain secara **sistematis**, datanya jelas, dan ada dalil-dalil keilmuan yang sudah diakui dan terbukti keabsahannya. Santai… semua orang pasti bisa menaklukan binatang yang bernama PENELITIAN ini; khususnya SKRIPSI (buat mahasiswa S1). Chayo! Pasti bisa!*

TYPE OF BUSINESS RESEARCH

Two different **purposes of research**:

- to solve a current problem faced by the manager in the work setting, demanding a timely solution; *(applied research)*.
- to generate a body of knowledge by trying to comprehend how certain problems that occur in organizations can be solved; *(basic research)*.

Applied research: research done with the intention of applying the results of the findings to solve specific problems currently being experienced in the organization.

Basic/fundamental/pure research: research done chiefly to enhance the understanding of certain problems that commonly occur in organizational settings, and seek methods of solving them.

CHAPTER II

THE HALLMARKS OF SCIENTIFIC RESEARCH

The main distinguishing **characteristics** of **scientific research**:

1. **Purposiveness:** started the research with a definite aim or purpose, purposive focus
2. **Rigor:** carefulness, scrupulousness, the degree of exactitude in research investigations. Good theoretical base and a sound methodological design
3. **Testability:** researcher develops certain hypotheses, then these can be tested by applying certain statistical tests to the data collected for the purpose
4. **Replicability:** the results of the tests of hypotheses should be supported again and yet again when the same type of research is repeated in other similar circumtances
5. **Precision and confidence:**
   - **Precision:** the closeness of the findings to "reality" based on a sample. Reflects the degree of accuracy or axactitude of the results on the basis of the sample – to what really exist in the universe
   - **Confidence:** the probability that our estimations are correct
6. **Objectivity:** the conclusions drawn through the interpretation of the results of data analysis based on the facts of the findings derived from actual data and not on our own subjective or emotional values
7. **Generalizability:** the scope of applicability of the research findings in one organizational setting to other settings. The research sampling design has to be logically developed and a number of other details in the data-collection methods need to be meticulously followed
8. **Parsimony:** simplicity in explaining the phenomena or problemsthat occur, and in generating solutions for the problems. Introduced with a good understanding of the problem and the important factors that influences it; good conceptual theoretical model

The reason for following a scientific method is that the results will be less prone to errors and more confidence can be placed in the findings because of the greater rigor in application of the design details. This also increases the replicability and generalizability of the findings.

Makanya, ikutin deh aturan scientific method. Ibaratnya, meneliti juga ada rukunnya; sama kayak sholat. Kalo kita sholat rukunnya berantakan, ga tertib urutan – ga teratur, kan sholatnya jadi ga karuan tu…. Ga jelas juntrungannya. Bisa-bisa ga ada artinya or ga ada nilainya. Prinsip "harus bertindak sesuai rukun" juga berlaku dalam melakukan penelitian.

BUILDING BLOCKS OF SCIENCE IN RESEARCH

Deduction: the process by which we arrive at a reasoned conclusion by logical generalization of a known fact.

Induction: a process where we observe certain phenomena and on this basis arrive at conclusions.

HYPOTHETICO-DEDUCTIVE METHOD

7 steps in the hypothetico-deductive method:

1. Observation
2. Preliminary information gathering
3. Theory formulation
4. Hypothesizing
5. Further scientific data collection
6. Data analysis
7. Deduction

CHAPTER IV

RESEARCH PROCESS

Research process for basic and applied research:

1. **Observation:** broad area of research interest identified
2. **Preliminary data gathering:** interviewing, literature survey
3. **Problem definition:** research problem delineated

4. **Theoretical framework:** variables clearly identified and labeled
5. **Generation of hypotheses:**
6. **Scientific research design:**
7. **Data collection, analysis, and interpretation:**
8. **Deduction:** hypotheses substantiated? Research question answered? *Kalau pada tahap ini hipotesis dan pertanyaan permasalahan belum terjawab, maka kita harus kembali ke proses 2, 3, 4, 5, 6, atau pun 7. Yang sabar ya say…☺*
   Kalau sudah terjawab, ya lanjut ke tahap selanjutnya;
9. **Report writing:**
10. **Report presentation:**
11. **Managerial decision making:**

Yeah, tahap pertama pasti observasi dulu. Gue inget banget, waktu pertama-tama dulu gue bilang mau ngangkat Kampung Betawi buat objek penelitian. Aswin bilang "gini deh! Kamu observasi dulu tu Kampung Betawi selama seminggu penuh berturut-turut. Kalo perlu, lo ga pulang-pulang, diem aja lo disana. Liatin orang-orang yang dateng, ada apa aja disana, ngapain aja, mereka dateng dari mana, pokoknya perhatiin apa aja yang terjadi di sana!".
Ga berenti sampe disitu! Gue disuruh wawancara si empunya yang berkuasa di Kampung Betawi itu. Tanya tentang Kampung Betawi, secara implisit tanyain juga masalah apa yang dihadapi sama Kampung Betawi, gali sebanyak-banyaknya informasi; untuk memahami objek penelitian lo. Dan yang ga kalah penting: tanyain mereka punya data-data sesuai kebutuhan lo ga; mereka bisa kasih data itu ke lo ga. Ini penting! Kalo mereka ga bisa kasih data sesuai kebutuhan lo, batalkan niat lo buat ngangkat tu objek. Gue saranin (sangat) lo ganti objek aja. Daripada tar lo repot belakangan, mending antisipasi dari awal khan! Oh, iya: ga ketinggalan, gue juga disuruh cari teori dan penelitian terdahulu yang relevan. Untuk memudahkan gue di masa mendatang.
Kalo lo udah observasi dan preliminary data gathering, baru deh lo bisa menemukan masalah utama yang akan lo angkat, secara spesifik, apa… permasalahan yang paling menarik, paling kritis, paling menggelitik, paling sensasional, yang paling membuat lo bertanya-tanya geregetan and penasaran! Silakan berkhayal…
Abis itu, dengan teori-teori yang lo temukan, lo bikin model deh…

Despite the fact that the research model is depicted and discussed in this book as if it were a step-by-step linear process, one has to bear in mind that it is not actually so in practice. For example, though the literature search and interviews might have been conducted before formulating the theoretical framework, **one may have to go back and conduct more interviews and/or seek additional information from the literature for a clearer understanding**, so as to refine the theory.
Gue setuju banget sama pernyataan ini! Soalnya gue juga ngerasain harus balik lagi, balik lagi, balik lagi, sampe gue bener-bener ngedapetin apa yang gue mau. Interview, nemu teori, interview, nemu teori, cari ketersediaan data, AARGGHH!!!! Mo gila! Mungkin ini yang dimaksud aswin "kalo nanti ternyata penemuan kamu ga cocok, ya kita rombak lagi". Sadis! Sialan. Tapi kita tetap harus sabar… SEMANGAAAAATTT!!!!!

Gue jadi inget pertanyaan Hermas: "kapan kita tau kalo penelitian kita udah bener-bener: BENER???". Dan aswin menjawab dengan sok romantis: "itu semua tergantung kecintaan kalian terhadap ilmu pengetahuan☺". Makanya, bikin penelitian tentang sesuatu yang benar-benar lo sukai, lo cintai. Jadi di tengah-tengah kegilaan dan kebingungan, masih ada alasan waras kenapa lo masih mau ngelanjutin tu penelitian: "karna gue suka banget! (selain karna alasan harus ngerjain skripsi supaya bisa lulus dari FE)". Percaya deh, ***mengerjakan sesuatu yang lo suka bakal bikin HIDUP lebih HIDUP****.*

OBSERVATION

1. Problems *currently existing* in an organizational setting that need to be solved
2. Areas that a manager believes *need to be improved* in the organization
3. A *conceptual or theoretical issue that needs to be tightened up* for the basic researcher to understand certain phenomena
4. Some research questions that a basic researcher wants to *answer empirically*

PRELIMINARY DATA COLLECTION

1. *Background information of the organization –that is, the contextual factors*
    - The origin and history of the company –when it came into being, business it is in, rate of growth, ownership and control, and so on
    - Size in terms of employees, assets, or both
    - Charter –purposes and ideology

- Location –regional, national, or other
- Resources –human and others
- Interdependent relationships with other institutions and the external environment
- Financial position during the previous 5 to 10 years, and relevant financial data

2. *Managerial philosophy, company policies, and other structural aspects*
   - Roles and positions in the organization and number of employees at each job level
   - Extent of specialization
   - Communication channels
   - Control systems
   - Coordination and span of control
   - Reward systems
   - Workflow systems and the like

3. *Perceptions, attitudes, and behavioral responses of organizational members and client systems (as applicable)*
   - Nature of the work
   - Workflow interdependencies
   - Superiors in the organization
   - Participation in decision making
   - Client systems
   - Co-workers
   - Rewards provided by the organization, such as pay raises and fringe benefits
   - Opportunities for advancement in the organization
   - Organization's attitudes toward employees family responsibilities
   - Company's involvement with community, civic, and other social groups
   - Company's tolerance of employees taking time off from the job

LITERATURE SURVEY

Good literature survey **ensure that**:

1. *Important variables* that are likely to influence the problem situation are not left out of the study
2. A *clearer idea* emerges as to *what variables* would be most important to consider (parsimony), *why* they would be considered important, and *how* they should be investigated to solve the problem. Thus, the literature survey helps the development of the theoretical framework and hypotheses for testing
3. The *problem statement can be made* with precision and clarity
4. *Testability and replicability of the findings* of the current research are enhanced
5. **One does not run the risk of "reinventing the wheel" that is, wasting efforts on trying to rediscover something that is already known**
6. The problem investigated is *perceived by the scientific community* as *relevant* and *significant*

PROBLEM DEFINITION

- *Narrow down* the problem from its original broad base and define the issues of concern more clearly.
- It is critical that the *focus* of further research, or in other words, the problem, be unambiguously identified and defined.
- No amount of good research can find solutions to the situation, if the *critical issue* or the problem to be studied is not *clearly pinpointed*.
- A problem *does not* necessarily mean that something is *seriously wrong* with a current situation that needs to be rectified immediately.
- A "problem" could simply indicate an *interest in an issue* where finding the right answers might help to improve an existing situation.
- It is fruitful to *define a problem as any situation where a gap exists between the actual and the desired ideal states.*
- "Is this factor I have identified an *antecendent*, the real *problem*, or the *consequence*?"

Problem definition or problem statement: a clear, precise, and succinct statement of the question or issue that is to be investigated with the goal of finding an answer or solution.

Could pertain to:

1. *Existing business problems* where a manager is looking for a solution *(applied research)*
2. Situations that may not pose any current problems but which the manager feels have *scope for improvement (applied research)*
3. Areas where some conceptual clarity is needed for better *theory building (basic research)*
4. Situations in which a researcher is trying to answer a *research question empirically* because of interest in the topic *(basic research)*

CHAPTER V

NEED FOR THEORETICAL FRAMEWORK

Theoretical framework: a conceptual model of how one theorizes or makes logical sense of the relationships among the several factors that have been identified as important to the problem.

- This theory flows logically *from documentation of previous research* in the problem area.
- *Integrating one's logical beliefs with published research*, taking into consideration the boundaries and constraints governing the situation, is pivotal in developing a scientific basis for investigating the research problem.
- Theoretical framework: discusses the *interrelationships among the variables* that are deemed to be integral to the dynamics of the situation being investigated.
- From the theoretical framework, then, *testable hypotheses can be developed* to examine whether the theory formulated is valid or not.
- The *entire research* rests on the *basis* of the theoretical framework.

VARIABLES

Variable: anything that can take on differing or varying values.

4 main **types of variables**:

1. Dependent variable (also known as the criterion variable)
2. Independent variable (also known as predictor variable)
3. Moderating variable

4. Intervening variable

Dependent variable:

- Variable of *primary interest* to the researcher
- The *researcher's goal* is to understand and describe the dependent variable, or to explain its variability, or predict it
- The *main variable* that lends itself *for investigation* as a viable factor
- It is possible to have more than one dependent variable in a study

*Pantesan! Mungkin ini yang dimaksud aswin dengan pertanyaan yang selalu dia tujukan ke gue: "**WHAT DO YOU WANT???**.....tujuan lo apa sih??? Lo mau apa ha???". Nah, kalo kayak gini gue jadi bingung lagi nih. Jadi dependent variable gue jumlah pengunjung atraksi wisata budaya PBB atau keinginan mengunjungi atraksi wisata budaya PBB????? Duh jadi bingung mikir lagi deh….*
*Wahai teman, makanya selalu tanyakan dan pastikan "tujuan akhir apa yang lo mau???". Itulah dependent variable lo… (hmm,,, sepertinya ini ga cuma berlaku buat penelitian deh, tapi dalam kehidupan nyata lo juga! **what do you want???!!!**)*

Independent variable:

- *One that influences the dependent variable* in either a positive or negative way
- When the independent variable is present, the dependent variable is also present
- With each unit of increase in the independent variable, there is an increase or decrease in the dependent variable also
- *Variance in the dependent variable* is accounted for by the independent variable

Moderating variable:

- One that has a strong *contingent effect* on the independent variable-dependent variable relationship
- Whenever the relationship between the independent variable and dependent variable becomes *contingent* or *dependent on another variable*, we say that the third variable has a moderating effect on the independent variable-dependent variable relationship

- The variable that *moderates the relationship* is known as the moderating variable

Intervening variable

- One that *surfaces between the time* the independent variables start operating to influence the dependent variable and the time their impact is felt on it
- There is thus a *temporal quality* or *time dimension* to the intervening variable
- The intervening variable surfaces as a *function of the independent variable(s)* operating in any situation, and helps to conceptualize and *explain the influence of the independent variable(s)* on the dependent variable

THEORETICAL FRAMEWORK

- It becomes evident at this stage that to arrive at good solutions to the problem, one should *correctly identify the problem first*, and *then the variables that contribute* to it.
- After identifying the appropriate variables, the next step is to *elaborate the network of associations among the variables*, so that *relevant hypotheses can be developed* and subsequently *tested*.
- Based on the *results of hypotheses testing* (which would indicate whether or not the hypotheses have been supported), the extent to which the problem can be solved would become evident.

Theoretical framework: elaborates the relationships among the variables, explains the theory underlying these relations, and describes the nature and direction of the relationships.

A good theoretical framework identifies and labels the important variables in the situation that are relevant to the problem identified.

Berarti gue bener dong…gue ga ngikutin teori dan penelitian lainnya secara plek-plekan sama! Gue pake mereka dengan menyesuaikan diri dengan kondisi kasus gue, si PBB.

5 basic features that should be incorporated in any theoretical framework:

1. The *variables* considered *relevant* to the study should be *clearly identified* and *labeled* in the discussions.

2. The discussions should state *how two or more variables are related to one another*. This should be done for the important relationships that are theorized to exist among the variables.
3. If the nature and direction of the relationships can be theorized on the basis of findings of previous research, then there should be an *indication* in the discussions as to *whether the relationships would be positive or negative*.
4. There should be a clear explanation of *why we would expect these relationships to exist*. This arguments could be drawn from the previous research findings.
5. A *schematic diagram* of the theoretical framework should be given so that the reader can see and easily comprehend the theorized relationship.

HYPOTHESES DEVELOPMENT

Hypotheses development: formulating such testable statement

Hypotheses: a logically conjectured relationship between two or more variables expressed in the form of a testable statement

- To call a relationship "statistically significant", we should be confident that 95 times out of 100 the observed relationship will hold true
- Only a 5% chance that the relationship would not be detected

Statement of hypotheses: format

- If-then statement
- Directional
  - The direction of the relationship between the variables (positive/negative) is indicated
  - The nature of the difference between two groups on a variable (more than/less than) is postulated
- Nondirectional
  - Do postulate a relationship or difference, but offer no indication of the direction of these relationships or differences
  - It may be conjectured that there would be a significant relationship between two variables, we may not be able to say whether the relationship would be positive or negative

- Formulated either because the relationships or differences have never been previously explored & no basis for indicating the direction, or because there have been conflicting findings in previous research studies on the variables

Null and alternate hypotheses

- **Null hypothesis:** a proposition that states a definitive, exact relationship between two variables
  - States that the population correlation between two variables is equal to zero or that the difference in the means of two groups in the population is equal to zero (or some *definite* number)
  - Expressed as no (*significant*) relationship between two variables or no (*significant*) difference between two groups
- **Alternate hypotheses**: the opposite of the null
  - Statement expressing a relationship between two variables or indicating differences between groups
- If we reject the null hypothesis, then all permissible alternative hypotheses relating to the particular relationship tested could be supported

Example:

- **Directional (group differences)**
  - Null hypothesis:

$$H0 : \mu M = \mu W$$
$$H0 : \mu M - \mu W = 0$$

  - Alternate hypothesis:

$$HA : \mu M < \mu W$$
$$HA : \mu M > \mu W$$

- **Nondirectional (group differences)**
  - Null hypothesis:

$$H0 : \mu AM = \mu AS$$
$$H0 : \mu AM - \mu AS = 0$$

  - Alternate hypothesis:

$$H0 : \mu AM \neq \mu AS$$

- **Directional (relationship between 2 variables)**
  - Null hypothesis:

H0 : there is no relationship between stress experienced on the job and the job satisfaction of employees

$$H0 : \rho = 0$$

- Alternate hypothesis:

$$HA : \rho < 0$$

- **Nondirectional (relationship between 2 variables)**
  - Null hypothesis:

$$H0 : \rho = 0$$

  - Alternate hypothesis:

$$HA : \rho \neq 0$$

Steps in hypotheses testing:

1. *State* the *null and the alternate* hypotheses
2. *Choose the appropriate statistical test* depending on whether the data collected are parametric or nonparametric
3. *Determine* the *level of significance* desired (p=0.05, or more, or less)
4. *See* if the *output results* from computer analysis *indicate* that the *significance level is met*. If, as in the case of Pearson correlation analysis in Excel software, the significance level is not indicated in the printout, look up the critical values that defined the regions of acceptance on the appropriate table [(t, F, X^2) –see tables at the end of the book]. This critical value demarcates the region of rejection from that of acceptance of the null hypotheses.
5. When the *resultant value* is *larger than critical value, the null hypotheses is rejected, and the alternate accepted*. If the calculated value is less than the critical value, the null is accepted and the alternate rejected.

Hypotheses generation and testing can be done both through deduction and induction:

- **Deduction:** the theoretical model is first developed, testable hypotheses are then formulated, data collected, and then the hypotheses are tested.
- **Induction:** new hypotheses are formulated based on what is known from the data already collected, which are then tested.

CHAPTER VI

RESEARCH DESIGN

- Purpose of the study
- Types of investigation
- Extent of researcher interference
- Study setting
- Unit of analysis (population to be studied)
- Time horizon

PURPOSE OF THE STUDY

Exploratory study:

- When *not much is known* about the situation at hand, or *no information* is available on how similar problems or research issues have been solved in the past
- To better *comprehend* the *nature of the problem* since very few studies might have been conducted in that area
- When some facts are known, but *more information is needed* for developing a viable theoretical framework
- For *obtaining a good graps* of the phenomena of interest and *advancing knowledge* through subsequent theory building and hypotheses testing

Descriptive study:

- To *ascertain* and be able to *describe the characteristics* of the *variables* of interest in a situation
- The *goal*: to offer to the researcher a *profile* or to *describe relevant aspects* of the phenomena of interest from an individual, organization, industry-oriented, or other perspective
- Present data in meaningful form, help to:
  - *Understand the characteristics* of a group in a given situation
  - *Think systematically* about aspects in a given situation
  - *Offer ideas* for further probe and research
  - Help *make* certain *simple decisions*

Hypotheses testing:

- *Explain* the *nature of certain relationships*, or establish the *differences* among groups or the independence of two or more factors in a situation
- To *explain* the *variance* in the *dependent variable* or to predict organizational outcome

Case study analysis:

- Involve in-depth, contextual *analyses* of matters relating to *similar situations in other* organizations
- Problem-solving technique
- Qualitative in nature, useful in applying solutions to current problems based on past problem-solving experiences
- Useful in understanding certain phenomena, and generating further theories for empirical testing

TYPE OF INVESTIGATION

Causal study: the study in which the researcher wants to delineate the *cause* of one or more problems

Correlational study: when the researcher is interested in delineating the important variables *associated* with the problem

STUDY SETTING

Field studies: correlational studies done in organizations

Field experiments: studies conducted to establish cause-and-effect relationship using the same natural environment in which employees normally fuction

Lab experiments: experiments done to establish cause and effect relationship beyond the possibility of the least doubt require the creation of an artificial, contrived environment in which all the extraneous factors are strictly controlled. Similar subjects are choosen carefully to respond to certain manipulated stimuli

UNIT OF ANALYSIS

Unit of analysis: level of aggregation of the data collected during the subsequent data analysis stage. Depend on problem statement focuses.

Individual: data gathered from each individual and treating each employee's response as an individual data source

Dyads: interested in studying two-persons interactions, then several two-persons groups

Groups: even though we may gather relevant data from all individuals comprising, we would aggregate the individual data into group data so as to see the differences among some groups (missal jadi 6 group)

Our research question determines the unit of analysis.

TIME HORIZON

Cross-sectional/one-shot studies: data are gathered just once, perhaps over a period of days or weeks or moths, in order to answer a research question

Longitudinal studies: data on the dependent variable are gathered at two or more points in time to answer the research question

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CHAPTER VIII

OPERATIONAL DEFINITION

Operationalizing the concepts: reduction of abstract concept to render them measurable in a tangible way

Operationalizing: defining a concept to render it measurable, is done by looking at the behavioral dimensions, facets, or properties denoted by the concept

Operationalizing the concept:

- They would probably have *some typical broad characteristics*, which we call *dimensions*.
- *Examining each* of the dimension and *breaking* each further *into its elements*
- These should somehow be *observable* and *quantitatively measurable*

What an operational definition is not:

- Does not describe the correlates of the concept
- Does not consist of delineating the reasons, antecedents, consequences, or correlates of the concept

If we either operationalize the concepts incorrectly or confuse them with other concepts, then we will not have valid measures. This means that we will not have "good" data, and our research will not be scientific.

Yeah…kalo kita salah mengoperasionalisasikan suatu variabel, fatal akibatnya. Bisa-bisa kita salah bikin pertanyaan buat diukur nilainya. Jelek deh datanya. (kayaknya gue baru sadar deh kalo gue salah operasionalisasi. Hix.)

Tips agar tidak salah operasionalisasi variabel:

- *Bikin landasan teori yang bagus! semua berawal dari landasan teori!*
- *Selalu temukan **definisi** yang tepat dari sebuah konsep ataupun variabel. DEFINISI itu kunci yang penting! Kalo kata Lovelock -si professor pemasaran jasa yang kita selalu punya kunci cinta- : **If you can't define something, you can't measure it, and what you can't measure you can't manage**.*
- *Punya definisi yang tepat, pasti akan menuntun lo kepada operasionalisasi variabel yang tepat. Ini teori gue, hehe ☺☺☺☺☺ (berdasarkan pengalaman pribadi). Pantesan, aswin selalu bertanya pada gue: "ini definisinya apa?! Itu definisinya apa?!". Hmmmm….pantes…aku baru mengerti sekarang….*

SCALES

Scale: a tool or mechanism by which individuals are distinguished as to how they differ from one another on the variables of interest to our study

4 basic **types of scales**: nominal, ordinal, interval, and ratio

Nominal scale: One that allows researcher to assign subjects to certain categories or groups

- Assigned *code number*
- These number serve as *simple* and *convenient* category labels with *no intrinsic value*, other than to assign respondents to one of two nonoverlapping or mutually exclusive categories

- Note that the categories are also collectively exhaustive
- The information is *to calculate* the *percentage* (or *frequency*)

Ordinal scale: not only categorizes the variables in such a way as to denote differences among the various categories, it also rank-orders the categories in some meaningful way

- Helps the researcher to determine the *percentage of respondents* who consider interaction with others as *most important*, those who consider using a number of different skills as most important, and so on

Interval scale: let us measure the distance between any two points on the scale

- Helps us to *compute the means* and the *standard deviations* of the responses on the variables
- Not only groups individuals according to certain categories and taps the order of these groups, it also *measures* the *magnitude of the differences* in the preferences among individuals
- The origin, or the starting point, could be any *arbitrary number*
- *More powerful* scale than the nominal and ordinal scale, and has for its *measure* of *central tendency* the arithmetic *mean*
- It measures of dispersion are the range, the standard deviation, and the variance

Ratio scale: not only measures the magnitude of the differences between points on the scale but also taps the proportions in the differences

- It *has* an *absolute* (in contrast to an arbitrary) *zero point*, which is a meaningful measurement point
- The *most powerful* of the 4 scales because it has a unique zero origin (not an arbitrary origin) and subsumes all the properties of the other three scales

Use of 4 types of **scales:**

- **Nominal scale:** for obtaining personal data such as gender or department
- **Ordinal scale:** to rank the preferences or usage of various brands of a product by individuals and to rank order individuals, objects, or events
- **Interval scale:** when responses to various items that measure a variable can be tapped on a five-point (or seven-point or any other number of points) scale, which can thereafter be summated across the items

- **Ratio scale:** when exact numbers on objective (as opposed to subjective) factor are called for

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CHAPTER IX

GOODNESS OF MEASURES

Goodness of measures: reasonably sure that the instruments we use in our research do indeed measure the variables they are supposed to, and that they measure them accurately

Item analysis: to see if the items in the instrument belong there or not.

- The *means* between the high-score group and the low-score group are tested to detect *significant difference* through the *t-values*
- The items with a *high t-value* (test which is able to identify the highly discriminating items in the instrument) are then *included in the instrument*

RELIABILITY

Reliability: tests how *consistently* a measuring instrument measures whatever concept it is measuring

- Measure stability and consistency

Reliability:

- **Stability of measures:** the ability of a measure to remain the same over time – despite uncontrollable testing conditions or the state of the respondents themselves
  - **Test-retest reliability:** the reliability coefficient obtained with a repetition of the same measure on a second occasion, the higher the better
  - **Parallel-form reliability:** when responses on two comparable sets of measures tapping the same construct are highly correlated
- **Internal consistency of measures:** the items should "hang together as a set" and be capable of independently measuring the same concept so that the respondents attach the same overall meaning to each of the items
  - **Interitem consistency reliability:** test of the consistency of respondents answer to all the items in a measure. To the degree that the items are

independent measures of the same concept, they will be *correlated with one another*. *Cronbach's coefficient alpha* used for multipoint-scaled items, *Kuder-Richardson formulas* used for dichotomous items. The higher the coefficients, the better the measuring instrument

- **Split-half reliability:** reflects the correlations between two halves of an instrument

VALIDITY

Validity: tests how well an instrument that is developed measures the *particular concept* it is intended to measure

- Whether we measure the right concept

Validity:

- **Content validity:** ensures that the measure includes an adequate and representative set of items that tap the concept. A function of how well the dimensions and elements of a concept have been delineated
- **Criterion-related validity:** established when the measure differentiates individuals on a criterion it is expected to predict
- **Construct validity:** testifies to how well the results obtained from the use of the measure fit the theories around which the test is designed
  - **Correlational analysis:** as in the case of establishing concurrent and predictive validity or convergent and discriminant validity
  - **Factor analysis:** a multivariate technique that would confirm the dimensions of the concept that have been operationally defined, as well as indicate which of the items are most appropriate for each dimension
  - **Multitrait:** multimethod matrix of correlations derived from measuring concepts by different forms and different methods

CHAPTER XI

POPULATION, ELEMENT, POPULATION FRAME, SAMPLE, & SUBJECT

Population: the entire group of people, events, or things of interest that the researcher wishes to investigate

Element: a single member of the population

Population frame: a listing of all the elements in the population from which the sample is drawn

Sample: a subset of the population, it comprises some members selected from it

Subject: a single member of the sample

SAMPLING

Sampling: the process of selecting a sufficient number of elements from the population, so that the study of the sample and an understanding of its properties or characteristics would make it possible for us to generalize such properties or characteristics to the population elements

- All conclusions drawn about the sample under study are generalized to the population
- X^{bar}, S, S^2 – are used as estimates of the population parameters μ, σ, σ^2

Reason for sampling:

- Self-evident
- Time, cost, and other human resources considered
- Sometimes likely to produce more reliable results

Representativeness of samples:

- Rarely will the sample be the exact replica of the population from which it is drawn
- If we choose the sample in a scientific way, we can be reasonably sure that the sample statistic (e.g.,X^{bar}, S, S^2) is fairly close to the population parameter (i.e.,μ, σ, σ^2)

NORMALITY OF DISTRIBUTIONS

- Attributes or characteristics of the population are generally normally distributed
- If we take a sufficiently large number of samples and choose them with care, we will have a sampling distribution of the means that has normality

- This is the reason that the two important issues in sampling are the sample size (n) and the sampling design
- If our sampling design and sample size are right, the sample mean X^{bar} will be within close range of the true population mean (μ)
- The more representative of the population the sample is, the more generalizable are the findings of the research

2 major **types** of **sampling design**:

1. Probability sampling
   - Simple random sampling
   - Complex probability sampling
     - Systematic sampling
     - Stratified random sampling
     - Proportionate and disproportionate stratified random sampling
     - Cluster sampling
     - Single-stage and multistage cluster sampling
     - Area sampling
     - Double sampling
2. Nonprobability sampling
   - Convenience sampling
   - Purposive sampling
     - Judgment sampling
     - Quota sampling

PROBABILITY SAMPLING

Probability sampling: when elements in the population have a known chance of being chosen as subjects in the sample

Simple random sampling: every element in the population has a known and equal chance of being selected as a subject

- **Best:** when the generalizability of the findings to the whole population is the main objective of the study

Complex probability sampling:

- **Systematic sampling:** drawing every nth element in the population starting with a randomly chosen element between 1 and n
  - **Best:** when the population frame is large, and a listing of the elements is conveniently available at one place

- **Stratified random sampling:** a process stratification or segregation, followed by random selection of subjects from each stratum. The population is first divided into mutually exclusive groups that are relevant, appropriate, and meaningful in the context of the study
  - **Best:** when differentiated information is needed regarding various strata within the population, which are known to differ in their parameters

- **Proportionate and disproportionate stratified random sampling:**
- **Proportionate:** the subjects drawn from each stratum, members represented in the sample from each stratum will be proportionate to the total number of elements in the respective strata
- **Disproportionate:** the subjects drawn from each stratum, the number of subjects from each stratum will now be altered, while keeping the sample size unchanged

- **Cluster sampling:** when several groups with intragroup heterogeneity and intergroup homogeneity are found, then a random sampling of the clusters or groups can ideally be done and information gathered from each of the members in the randomly chosen clusters
  - **Best:** when heterogeneous group is to be studied at one time

- **Single-stage and multistage cluster sampling:** the division of of the population into convenient clusters, randomly choosing the required number of clusters as sample subjects, and investigating all the elements in each of the randomly chosen clusters

- **Area sampling:** constitutes geographical clusters, when the research pertains to populations within identifiable geographical areas such as coutries, city blocks, or particular boundaries within a locality
  - **Best:** when the goal of the research is confined to a particular locality or area

- **Double sampling:** where initially a sample is used in a study to collect some preliminary information of interest, and later a subsample of this primary sample is used to examine the matter in more detail
  - **Best:** provided added information at minimal additional expenditure

NONPROBABILITY SAMPLING

Nonprobability sampling: the elements in the population do not have any probabilities attached to their being chosen as sample subjects

Convenience sampling: collection of information from members of the population who are conveniently available to provide it

- **Best:** to obtain some "quick" information to get a feel for the phenomenon or variables of interest

Purposive sampling: confined a specific types of people who can provide the desired information, either because they are the only ones who have it, or conform to some criteria set by the researcher

- **Judgment sampling:** the choice of subjects who are most advantageously placed or in the best position to provide the information required
  - **Best:** where the collection of "specialized informed inputs" on the topic area researched is vital, and the use of any other sampling design would not offer opportunities to obtain the specialized information

- **Quota sampling:** a form of proportionate stratified sampling, in which a predetermined proportion of people are sampled from different groups, but on a convenience basis
  - **Best:** for the inclusion of all groups in the system researched

ISSUES IN DETERMINING SAMPLE SIZE

1. **Precision**
   - How close our estimate is to the true population characteristic
   - The narrower this interval, the greater the precision

- A function of the range of variability in the sampling distribution of the sample mean
- If we want to reduce the standard error given a particular standard deviation in the sample, we need to increase the sample size

2. Confidence

- How certain we are that our estimates will really hold true for the population
- Reflects the level of certainty with which we can state that our estimates of the population parameters will hold true
- A 95% confidence is the conventionally accepted level for most business research, most commonly expressed by denoting the significance level as $p \leq 0.05$
- At least 95 times out of 100, our estimate will reflect the true population characteristic

The sample size, **n**, is a **function of**:

1. The variability in the population
2. Precision or accuracy needed
3. Confidence level desired
4. Type of sampling plan used

4 aspects while **making decisions** on the **sample size**:

1. How much precision is really needed in estimating the population characteristics of interest – what is the *margin* of allowable errors?
2. How much confidence is really needed – how much *chance* can we take of making errors in estimating the population parameters?
3. To what extent is there *variability* in the population on the characteristics investigated?
4. What is the *cost-benefit* analysis of increasing the sample size?

Roscoe (1975); **rules** of thumb for **determining sample size**:

1. Sample sizes larger than *30* and less than *500* are appropriate for most research
2. Where samples are to be broken into *subsamples* (ex:male/female, etc), a minimum sample size of *30 for each category* is necessary

3. In *multivariate research* (including multiple regression analysis), the sample size should be *several times* (preferably 10 times or more) as large as the *number of variables* in the study
4. For simple *experimental research* with tight experimental controls (matched pairs, etc), successful research is possible with samples as small as *10 to 20* in size

Kalo menurut gue sih, tahapan yang paling genting dan paling kritis ya di pembuatan BAB 3 alias pembuatan/penentuan metodologi ini. Ibaratnya bikin racikan obat, BAB 3 ini kayak tahap ketika lo lagi menentukan takaran dosis setiap elemen ramuan (ya populasi, ya sample, ya lainnya). Kalo dosisnya kurang, pasien ga sembuh, merana harus menderita terus-menerus. Kalo dosisnya berlebihan, pasien over dosis, meledak nanti! Dua-duanya sama-sama gawat. Kalo lo udah bikin BAB 3 lo dengan benar, selanjutnya gampang kok, tinggal ngambil data or sebar kuesioner, analisa. Tingal jalan….ga perlu berlari-lari jatuh bangun kedebak-kedebuk. Well, udah bisa berpikir lebih santai lah…..

Tapi inget!!! BAB 3 juga berasal dari BAB 2! Model penelitian lo kan berasal dari landasan teori di BAB 2. Salah teori, bisa-bisa salah model. Salah model, berakibat salah operasionalisasi variabel. Salah operasionalisasi variabel, salah kuesioner. Salah kuesioner, salah data. Salah data, tebak sendiri….
Tapi, BAB 2 juga berasal dari BAB 1 lho…. Lo kan harus tau permasalahan lo dengan jelas tuh. Apa yang jadi latar belakang permasalahannya, apa hasil akhir yang lo mau. Semua itu yang menentukan teori-teori apa aja yang lo butuhin untuk dicantumin!
Hahahaha…. Intinya sih, semua harus dikerjakan secara berurutan yah: BAB 1-2-3. Inget prinsip "rukun" yang gue jabarin di atas…. Pokoknya selamat mengerjakan BAB1,2,3 bolak-balik deh. 1,2,3 – 3,2,1 – 2,1,3 – begitu aja terus! Yang penting: sabar… semua harus dikerjakan dengan ***ketenangan*** *akal dan pikiran. Nikmatin aja* ***proses****nya☺☺☺ goodluck yo!*

CHAPTER XII

4 **steps** in **data analyis**:

1. Getting data ready for analyis

2. Getting a feel for the data
3. Testing the goodness of data
4. Testing the hypotheses

GETTING DATA READY FOR ANALYSIS

Editing data:

- Data have to be edited
- Information that may have been noted down by the interviewer, observer, or researcher in a hurry must be clearly deciphered so that it may be coded systematically in its entirety
- Incoming mailed questionnaire data have to be checked for incompleteness and inconsistencies

Handling blank responses:

- Not all respondents answer every item in the questionnaire
- Blank because the respondent did not understand the question, did not know the answer, was not willing to answer, or was simply indifferent to the need to respond to the entire questionnaire
- Way to handle a blank response:
  - Assign the midpoint in the scale as the response to that particular item
  - Allow the computer to ignore the blank responses when the analysis are done
  - Assign to the item the mean value of the responses of all those who have responded to that particular item
  - Give the item the mean of the responses of this particular respondent to all other questions measuring this variable
  - Give the missing response a random number within the range for that scale

Coding:

- Code the responses
- Coding sheet first to transcribe the data from the questionnaire and then key in the data

Categorization

- Set up scheme for categorizing the variables such that the several items measuring a concept are all grouped together
- Responses to some of the negatively worded questions have also to be reversed so that all answers are in the same direction

Entering data

- Questionnaire data are collected on scanner answer sheets or tha raw data manually keyed into the computer

DATA ANALYSIS

3 **objectives** in data analysis:

1. Getting a feel for the data
2. Testing the goodness of data
3. Testing the hypotheses developed for the research

Feel for the data:

- Examination of the measure of central tendency, and how clustered or dispersed the variables are, gives a good idea of *how well the questions were framed for tapping the concept*
- The statistics give feel for the data:
  - The frequency distributions for the demographic variables
  - The mean, standard deviation, range, and variance on the other dependent and independent variables
  - An intercorrelation matrix of the variables, irrespective of whether or not the hypotheses are directly related to these analysis

Testing goodness of data:

- Reliability:
  - Testing consistency and stability
  - Consistency indicates how well the items measuring a concept hang together as a set
  - Cronbach's alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another
  - The closer Cronbach's alpha is to 1, the higher the internal consistency reliability

- Validity:
  - Factorial validity can be established by submitting the data for factor analysis
  - The results of factor analysis (a multivariate technique) will confirm whether or not the theorized dimensions emerge

Hypotheses testing:

- Test the hypotheses already developed for the study

Analisis. Selamat merangkai kata. Selamat merangkai logika! Ayo fitut…. Yang rajin dong ah! Jangan menunda-nunda!

PEKERJAAN TEKNIS

SPECIMENT FORMAT FOR REFERENCING [APA FORMAT]

Book by single author

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SUMMARY: UMA SEKARAN

FITRI UTAMI NINGRUM
0604001559
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Sekaran, Uma. (2003). Research Methods for Business, 4th Ed. USA: Wiley