

# Measuring Organizational Autonomy

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## Abstract

Through the review of the literature an attempt is made to define organizational autonomy and to explain how it differs from other related concepts like individual autonomy and decentralization. Further the researchers have developed a measure for organizational autonomy. The standard procedures for developing a scale are followed from concept definition to reliability testing. The procedures included establishing psychometric properties of the scale through content validity, scale dimensionality and internal consistency reliability. The outcome of the research is an eighteen item organizational autonomy scale comprising three dimensions of personnel, marketing and goal setting autonomy.

**Keywords:** Organisational Autonomy; Factor Analysis; Chronbach's alpha reliability

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## 1. Introduction

### 1.1. Autonomy

Autonomy may be defined as the degree to which one may make significant decisions without the consent of others. The construct could be analyzed at two levels namely; 1) Autonomy of individuals within an organization and 2) Autonomy of an organization or its sub-units (Brock, 2003). An individual may be considered having autonomy in carrying out a particular activity if norms of the organization don't necessitate the individual to seek permission from or advice of superiors, co-workers or subordinates in executing the activity. Similarly, autonomy of an organization or its sub-units refers to their freedom to make decisions and implement them without having to take consent from parties external to the organization or the units. Many researchers have studied individual autonomy and proposed that higher autonomy has association with less complex task assignment, lower risk, more control over information flow, and more formalized interaction (Dill, 1958). Turner and Lawrence (1965) observed autonomy to be a requisite task attribute that promotes job satisfaction and lower absenteeism among employees. Porter *et al.* (1975) considered autonomy to be a human need. Osborn *et al.*

(1980) observed that low autonomy is associated with low quality of work life, though it may vary among people. Nielson and Pederson (2003) found that giving front line employees more decision-making autonomy helps competitiveness of the firm.

While studying autonomy at an organizational level the organizations may be rated according to their degree of autonomy. This would be especially relevant in the case of organizations falling as part of a large corporation, or a fraternity that is a part of national fraternity. Likewise corporations that are by design a collection of many subunits like banks with many branches or an organized retailer with many outlets could be rated on the degree of autonomy enjoyed by these subunits or the overall organization. Datta *et al.* (1991) defined organizational autonomy as day-to-day freedom to manage. Centralization and low autonomy have been found to be strongly related to standardization of personal procedures, low functional specialization, percentage of subordinates and percentage of non-workflow personnel (Holdaway, 1975). Research on the autonomy of various units within multinational corporations has found that subsidiary autonomy was greater in certain functional areas (like marketing and personnel) than in others (Research and Development and finance) (Vachani, 1999).

## 1.2. Autonomy and Decentralization

Autonomy refers to the extent of decision making authority wielded by a given position, person, or organization. In evaluating autonomy we ask the question, "How much of decision making authority does X have?" Centralization concerns the locus of decision-making authority in an organization- the extent to which decision-making is concentrated in a single point or diffused through out the organization. A decentralized organization is one in which power is dispersed among many individuals (Mintzberg, 1989).

Though these constructs may coincide and have similar connotations, they often differ and imply varying organizational outcomes. We may affirm that given reliable and valid measures, effective strategic contingencies for a decentralized unit will differ from that for an autonomous unit, and similarly for a centralized versus a low autonomous organization. That would mean autonomy and decentralization are different also that centralization and low autonomy are different. Fig. 1, depicted below, explains the difference between autonomy and decentralization. ABC and D are unit managers of four different subunits of company ABC LTD.

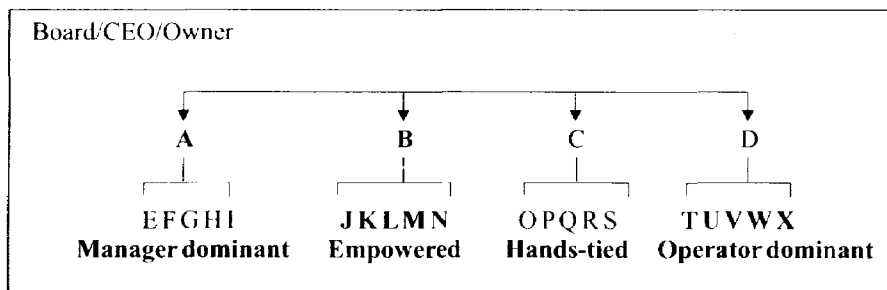


Fig. 1. Depiction of Differences between Autonomy and Decentralization at ABC Ltd.

### Autonomy and Decentralization for Four hypothetical Organizations

| Organization | Description of Structure       |
|--------------|--------------------------------|
| A            | Autonomous and Centralized     |
| B            | Autonomous and decentralized   |
| C            | Low autonomy and centralized   |
| D            | Low autonomy and decentralized |

Thus in B autonomy and decentralization coincide; but in D they don't.  
In A autonomy and centralization coincide; but in C they don't

Therefore one can clearly ascertain that autonomy and decentralization are two different constructs and that autonomy may not be treated as a surrogate to measure centralization and vice versa. However, as in the case of subunit B autonomy and decentralization coincide at the lowest level in an organization. Therefore, in common usage decentralization may be considered the extent to which operators are autonomous. The term operator autonomy thus

is analogous to decentralization; conversely low operator autonomy could indicate centralization.

## 2. Measurement of Autonomy

Inkson (1970) used a 23 item questionnaire to measure autonomy. Intended responses to the measurement items were either 'Yes' or 'No'. This questionnaire did not capture the possibility of decision-making freedom, which

was neither absolute nor non-existent. Moreover, autonomy was used as a measure of centralization (Pugh, 1968) or concentration of authority (Inkson, 1970) in these studies. However, autonomy and centralization are two different concepts. Hackman and Lawler (1971) measured workers autonomy on a seven point scale. Sims *et al.* (1976) studied autonomy and other dimensions of job characteristics with their Job Characteristics Inventory (JCI), a five point scale questionnaire. These studies however treat individual autonomy rather than organizational autonomy.

The instrument measuring autonomy in Inkson *et al.* (1970) is similar to that measuring centralization in Pugh *et al.* (1968). Though similar instruments were used these two studies succeeded in differentiating between autonomy and centralization as follows: Centralization was measured by asserting the level at which the decisions were made. Autonomy was how many decisions could be made at a given position or person. Thus centralization was a characteristic of the entire structure of an organizational unit - a more generalized measure, where as autonomy was a reading of decision - making authority at a specific location.

Inkson *et al.* (1970) established the reliability and validity of short forms for the measurement of four previously established dimensions of organizations- two contextual: technology, dependence and two structural: structuring of activities, concentration of authority. According to the authors an organization lacks autonomy if decisions are taken at a level of authority in context of organization's structure. The organization's autonomy score was measured based on the number of decisions, from a set list of 22 items, which are taken at a higher level of authority. Higher the number greater the concentration of authority and in turn lesser the autonomy. This measurement appears to have two problems. One, it equates autonomy to centralization. The second, It does not account for partial autonomy i.e. a degree of freedom one might have in making specific decisions which ranges between no freedoms to full freedom.

Lioukas *et al.* (1993) studied state owned enterprises (SOEs) in Greece and found that the state control on SOEs has positive relationship to the dependence of SOEs on the State for

resources and negative relationship to market competition and demand unpredictability. They treated autonomy as the discretion of the SOE management vis-à-vis the state authorities. The following dimensions operationalized state autonomy:

1. Total state control
2. Control on strategic issues
3. Control on output decisions
4. Control on resource mobilization issues:
  - i. Control on human resources
  - ii. Control on financial resources
  - iii. Control on purchasing decisions

All the six, except output, decisions were composite variables consisting of many distinct measures referring to all partial controls. Each was measured in a five-point Likert-type scale ranging from 1 (full autonomy) to 5 (very tight control). Control was operationalized by the researchers on various functional dimensions. In the present study autonomy is proposed to be operationalized on the same line.

Thus the previous studies treating organizational autonomy are found to be having definitional or measurement problems with the concept. In the current study researchers accepting the definition of Brock developed a measurement scale for organizational autonomy. Literature on scale development along with procedure followed for scale development in the present research is explained below.

## 2.1. Literature on Measurements, Scales and Scale Construction

Measurement is one of the fundamental activities of any science. Measurement consists of two basic processes called conceptualization and operationalization, then an advanced process called determining the levels of measurement, and then even more advanced methods of measuring reliability and validity.

Conceptualization is the process of taking a construct or concept and refining it by giving it a conceptual or theoretical definition. Ordinary dictionary definitions will not do. Instead, the researcher takes keywords in their research question or hypothesis and finds a clear and consistent definition that is agreed-upon by others in the scientific community. Sometimes, the researcher pushes the envelope by coming

up with a novel conceptual definition, but such initiatives are rare and require the researcher to have intimate familiarity with the topic. More common is the process by which a researcher notes agreements and disagreements over conceptualization in the literature review, and then comes down in favor of someone else's conceptual definition. It's perfectly acceptable in science to borrow the conceptualizations and operationalizations of others. Conceptualization is often guided by the theoretical framework, perspective, or approach the researcher is committed to.

Operationalization is the process of taking a conceptual definition and making it more precise by linking it to one or more specific, concrete indicators or operational definitions. These are usually things with numbers in them that reflect empirical or observable reality. They're what link the world of "ideas" to the world of everyday "reality". It is more important that ordinary people would agree on the indicators than those inside the enterprise of science. One imperative at this stage is to ensure a fairly good epistemic correlation, which is nothing but the goodness-of-fit between the operationalized and construct definitions for of a scale.

A level of measurement is the precision by which a variable is measured. For more than half a century, with little detraction, science has used the Stevens (1951) typology of measurement levels. There are three vital things to remember about this typology: (1) anything that can be measured falls into one of the four types; (2) the higher the type, the more precision in measurement; and (3) every level up contains all the properties of the previous level. The four levels of measurement, from lowest to highest, are: Nominal, Ordinal, Interval, and Ratio. The nominal level of measurement describes variables that are categorical in nature. The characteristics of the data one is collecting fall into distinct categories. If there are a limited number of distinct categories (usually only two), then it is a discrete variable. If there are an unlimited or infinite number of distinct categories, then it is a continuous variable. The ordinal level of measurement describes variables that can be ordered or ranked in some order of importance. The interval level of

measurement describes variables that have more or less equal intervals, or meaningful distances between their ranks. The ratio level of measurement describes variables that have equal intervals and a fixed zero (or reference) point. Advanced statistics require at least interval level measurement, so the researcher always strives for this level, accepting ordinal level (which is the most common) only when they have to. Variables should be conceptually and operationally defined with levels of measurement in mind since it is going to affect how well one can analyze the data later on.

Reliability and Validity are essential for any research study to be faithful. Reliability means that the findings would be consistently the same if the study were done over again. Validity refers to the truthfulness of findings; i.e., whether it measures what it is to measure. A study can be reliable but not valid, and it cannot be valid without first being reliable.

#### *2.1.1. Construct definition*

Psychometric literature recommends construct definition as the first step in scale development. Therefore, drawing from existing literature researcher specified what organizational autonomy is (Brock, 2003; Inkson *et al.*, 1970; Sims *et al.*, 1976) and at the same time differentiated it from other related constructs (Brock, 2003). Autonomy is defined as the degree to which one may make significant decisions without the consent of others (Brock, 2003). Autonomy in the current context is treated as autonomy of an organizational subunit and not that of the whole organization to which the subunit is a part. Thus the unit of analysis is the subunit and the autonomy of a subunit is considered as the freedom the head of the subunit has in making decision without consulting others external to the subunit. Autonomy is conceptually and practically different from other structural variables such as decentralization and empowerment.

#### *2.1.2. Content or Face validity*

Face validity demands that on the surface the scale items should appear consistent with the theoretical domain of the construct i.e. items generated should tap the domain of the construct. Judges with expertise in the literature

shall screen items, and several pilot tests on samples from relevant population shall be conducted to trim the items and to refine the pool of items.

Items were generated from junior and middle level executives working in various service organizations. These were executives working at lower or middle managerial levels in various organizations and were participants of an executive development programme. They were asked to list down all decisions that could be taken by a manager with independent responsibility of a business unit in a services firm. 95 items were generated in total. 9 items that were to be obviously out due to duplication or being out of domain of the construct were deleted. Balance 86 items were presented to a panel of four experts with experience in banking and financial services industry ranging from fifteen years to twenty-eight years. They were asked to select only those items from the list they found to be relevant to a branch manager in a bank. Experts also were briefed as to the need for presenting items in the shortest and simplest manner possible to ensure easiness in response as well as reliability. Researcher retained all items that were selected at least by one of the experts, which resulted in 22 items. These items were further pruned by an expert who worked in banking and as well had academic research interest. Four items were dropped by the expert resulting in 18 pruned items.

- Setting monthly targets
- Marketing territories
- Pricing of services
- Sales/marketing agents
- Marketing budgets
- Cost of customer acquisition
- To sanction loans
- To decide on resource acquisition procedures
- Service quality standards to be maintained
- Recruiting service staff
- Promoting staff
- Creating a new job
- Dismissing a staff
- Remunerating staff
- Training needs and methods
- Allocating work among available personnel
- Advertising or other means of promotion
- New product or service introduction

Freedom to make decisions could range from "no freedom" to "very high freedom". A

rating scale is appropriate for capturing such a continuous variable. Therefore, a seven points rating scale was used to measure autonomy on all the eighteen items. A score of seven would mean that the respondent has very high freedom and a low score of one would mean that the respondent has practically no freedom.

### 2.1.3. Scale Dimensionality

A constructs domain may be one-dimensional or multi-dimensional. The scale or subscales used to operationalize the construct is expected to reflect the hypothesized dimensionality. Since managerial decisions in a business organization could be classified based on managerial functions such as planning, organizing, staffing, directing and controlling or along business functions such as Finance, Human Resource, Marketing, Production etc. the scale items were expected to belong to any one or a few of these functions. The scale's empirical factor structure could therefore be reflecting these dimensions. To check for the dimensionality of the scale a factor analysis was conducted using SPSS software.

Rotated component Matrix showed that the items loaded on three major components. Items loaded together on two of the three components reflected similarities along business managerial functions namely personnel and marketing functions. Therefore the components were labeled along these business functions. Six items loaded on component one that was labeled as Marketing Autonomy, the seven items loaded on component two labeled Personnel Autonomy. The last component did not reflect any functional connotation but comprised items mostly related to goals to be set and achieved and therefore was labeled Goal Setting Autonomy.

### Factor Analysis for Examining Scale

Table 1.1

| Component | Total Variance Explained          |               |              |
|-----------|-----------------------------------|---------------|--------------|
|           | Rotation Sums of Squared Loadings |               |              |
|           | Total                             | % of Variance | Cumulative % |
| 1         | 4.392                             | 24.400        | 24.400       |
| 2         | 4.223                             | 23.462        | 47.862       |
| 3         | 3.953                             | 21.960        | 69.822       |

Extraction Method: Principal Component Analysis.

**Table 1.2**  
**Rotated Component Matrix(a)**

| Items                                              | Component |      |      |
|----------------------------------------------------|-----------|------|------|
|                                                    | 1         | 2    | 3    |
| 8. To decide sales/marketing agents                | .777      |      |      |
| 13. create a new job                               | .754      |      |      |
| 11. decide on marketing promotion                  | .735      |      |      |
| 7. The price of the service                        | .698      |      |      |
| 2. to decide on resource acquisition procedures    | .638      |      |      |
| 5. Determine a new product or service introduction | .604      |      |      |
| 15. decide on remuneration of staff                |           | .816 |      |
| 18. decide on recruitment of personnel             |           | .776 |      |
| 14. dismiss a staff                                |           | .773 |      |
| 12. promote staff                                  |           | .690 |      |
| 10. decide on cost of customer acquisition         |           | .617 |      |
| 9. To decide marketing budgets                     |           | .559 |      |
| 16. decide on the training needs and methods       |           | .523 |      |
| 3. service quality standards shall be maintained   |           |      | .836 |
| 17. allocate work among available personnel        |           |      | .733 |
| 4. Decide on the monthly target of the unit        |           |      | .729 |
| 6. Determine territories to be covered             |           |      | .532 |
| 1. to sanction loans                               |           |      | .502 |

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 Rotation converged in 9 iterations.  
 (Loadings Below 0.5 suppressed for clarity)

Rotated component Matrix showed that the items loaded on three major components. Items loaded together on any one component reflected business-functional similarity. Therefore the components were labeled along the business function to which the decisions primarily belonged. Thus six items loaded on component one was labeled as Marketing Autonomy, the seven items loaded on component two together was labeled Personnel Autonomy and the last component comprising five items was labeled Goal Setting Autonomy.

*2.1.4. Reliability Analysis (ALPHA) for the Scale*

There are two broad types of reliability in psychometric literature:

1. Test-retest: The correlation between the same person's score on the same set of items at two points in time. It is not done in majority of scale development exercises.

2. Internal consistency: Items comprising a scale or subscale should show high levels of internal consistency. Commonly used criteria for assessing internal consistency are individual corrected item to total correlations, the inter item correlated matrix for all items or for items proposed to measure a given scale dimension, and a number of reliability coefficients.

The most widely used internal consistency reliability coefficient is the Chronbach's alpha. Reliability analysis (alpha) was conducted for the scale as a whole (Table 4.3) and then for each of the components constituting the scale (Tables 4.4, 5 & 6). The rule of thumb for reliability

analysis, according to Nunnally (1978) is that reliability level of 0.70 will suffice in exploratory settings though in those applied settings where important decisions are made a minimum reliability coefficient of 0.90 is a must. The overall alpha value was determined to be 0.951. Note also that no corrected inter-item correlation fell below 0.3, which is a positive signal of the internal consistency of the scale. "Alpha if item deleted" column gives figures,

none of which is above the aggregated alpha value for all the items taken together. This means that the overall internal stability will be negatively affected if any variable is removed from the membership in the scale. Alpha values arrived at from the dimension-wise analysis are also presented. Note that the above said conditions are satisfied in dimension wise analysis also.

**Table 1.3: Reliability ALPHA for All Items of Autonomy Scale  
Dimension 1: Personnel Autonomy  
Item-Total Statistics**

| Item-Total Statistics |                            |                                |                                  |                              |                                  |
|-----------------------|----------------------------|--------------------------------|----------------------------------|------------------------------|----------------------------------|
|                       | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
| v1                    | 57.7833                    | 489.516                        | .571                             | .483                         | .951                             |
| v2                    | 57.5583                    | 469.274                        | .756                             | .766                         | .948                             |
| v3                    | 56.2667                    | 474.869                        | .619                             | .752                         | .950                             |
| v4                    | 56.6167                    | 469.768                        | .703                             | .761                         | .949                             |
| v5                    | 57.4583                    | 469.696                        | .756                             | .717                         | .948                             |
| v6                    | 56.6250                    | 471.194                        | .684                             | .591                         | .949                             |
| v7                    | 56.7333                    | 470.752                        | .746                             | .719                         | .948                             |
| v8                    | 56.5833                    | 465.052                        | .723                             | .701                         | .949                             |
| v9                    | 57.4417                    | 469.778                        | .756                             | .697                         | .948                             |
| v10                   | 57.9083                    | 482.319                        | .686                             | .602                         | .949                             |
| v11                   | 56.4833                    | 464.504                        | .740                             | .838                         | .948                             |
| v12                   | 56.8000                    | 459.304                        | .816                             | .843                         | .947                             |
| v13                   | 57.1250                    | 463.589                        | .790                             | .792                         | .947                             |
| v14                   | 57.7750                    | 484.714                        | .692                             | .762                         | .949                             |
| v15                   | 57.3833                    | 477.079                        | .652                             | .723                         | .950                             |
| v16                   | 55.7000                    | 470.918                        | .794                             | .753                         | .947                             |
| v17                   | 54.8750                    | 500.060                        | .500                             | .494                         | .952                             |
| v18                   | 56.5667                    | 470.836                        | .692                             | .735                         | .949                             |

Valid Cases: 120Alpha: .951Items:18

**Table 1.4: Reliability ALPHA for Items of Personnel Autonomy  
Dimension 2: Marketing Autonomy  
Item-Total Statistics**

|     | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|-----|----------------------------|--------------------------------|----------------------------------|------------------------------|----------------------------------|
| v9  | 19.2314                    | 68.313                         | .734                             | .585                         | .904                             |
| v10 | 19.7107                    | 72.207                         | .701                             | .521                         | .908                             |
| v12 | 18.5785                    | 63.729                         | .819                             | .708                         | .895                             |
| v14 | 19.5620                    | 72.515                         | .743                             | .688                         | .905                             |
| v15 | 19.1653                    | 68.322                         | .730                             | .684                         | .905                             |
| v16 | 17.4711                    | 69.935                         | .718                             | .546                         | .906                             |
| v18 | 18.3306                    | 65.473                         | .774                             | .661                         | .900                             |

Valid cases: 121Alpha: .917Items: 7

**Table 1.5: Reliability ALPHA for Items of Marketing Autonomy  
Dimension 3: Goal Setting Autonomy  
Item-Total Statistics**

|     | Scale Mean<br>if Item<br>Deleted | Scale<br>Variance if<br>Item Deleted | Corrected<br>Item-Total<br>Correlation | Squared<br>Multiple<br>Correlation | Cronbach's<br>Alpha if<br>Item Deleted |
|-----|----------------------------------|--------------------------------------|----------------------------------------|------------------------------------|----------------------------------------|
| v2  | 16.7000                          | 60.632                               | .744                                   | .609                               | .905                                   |
| v5  | 16.6000                          | 61.570                               | .710                                   | .581                               | .909                                   |
| v7  | 15.8750                          | 60.144                               | .778                                   | .635                               | .900                                   |
| v8  | 15.7250                          | 57.327                               | .775                                   | .645                               | .901                                   |
| v11 | 15.6250                          | 58.068                               | .756                                   | .679                               | .903                                   |
| v13 | 16.2667                          | 57.424                               | .830                                   | .727                               | .893                                   |

Valid Cases: 120 Alpha: .917 Items:6

**Table 1.6: Reliability ALPHA for Items of Goal Setting Autonomy**

|     | Scale Mean<br>if Item<br>Deleted | Scale<br>Variance if<br>Item<br>Deleted | Corrected<br>Item-Total<br>Correlation | Squared<br>Multiple<br>Correlation | Cronbach's<br>Alpha if Item<br>Deleted |
|-----|----------------------------------|-----------------------------------------|----------------------------------------|------------------------------------|----------------------------------------|
| v3  | 14.9421                          | 24.972                                  | .716                                   | .602                               | .769                                   |
| v17 | 13.5124                          | 32.719                                  | .554                                   | .323                               | .819                                   |
| v6  | 15.2975                          | 26.977                                  | .610                                   | .436                               | .803                                   |
| v1  | 16.4463                          | 31.283                                  | .520                                   | .275                               | .824                                   |
| v4  | 15.2727                          | 24.667                                  | .773                                   | .656                               | .750                                   |

Valid Cases: 121 Alpha: .830 Items: 5

Thus the scale satisfies the fundamental requirements for acceptance as a valid and reliable measure for the construct "Organizational Autonomy".

### 3. Conclusion

The current research resulted in the development of a valid and reliable measure for

organizational autonomy in the context of organizational subunits. The study has taken a step forward in developing a scale and empirically validating the same. Authors appeal for further empirical validation of the scale in varying domains and contexts. Authors also hope that future researchers would find the organizational autonomy scale useful in their research efforts.

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