Exploring the Different Roles of the Designer in Practice: Creator or Others

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Abstract

The roles of designers are shaped and influenced by continuously changing eigenvalues and norms of the profession and the structure of the socio-cultural and economic environment. In this context, the designer's emerging roles should be updated by discussing the contemporary status of the profession and the ecosystem where the roles occur. For this purpose, the study explored 83 roles from literature and scored their weights according to key/major roles to create a contingency table. Later, CA is applied to highlight their connections and the correspondences between the key/major roles. Then, HCA is applied to determine the appropriate number of clusters that will be discussed. Finally, sample role sets of literature are demonstrated to illustrate consistency.

Keywords: Designers roles; design practice; Correspondence Analysis; Hierarchical Cluster Analysis.

1. Introduction

Design, as a discipline, has been associated with creativity since the past, and the importance of design creativity has been highlighted in many studies. Despite the assumed centrality of creativity in the design process, the designer's challenging new roles have emerged in multidisciplinary innovation settings, yet the difference between design and creativity is intention. Although creativity is an essential and inevitable element that adheres to the designer, new design theories and practices address new designer roles. Therefore, in this context, the research questions state: What are the old and new roles of the designer? What are the relationships between these roles? Can these roles be grouped under general headings?

In an economic sense, the production and consumption of goods and services are considered as a whole. Furthermore, a system is a complex whole of interrelated components. As a system requirement, each component contributes to integrity, harmony, and stability by fulfilling particular aims and functions related to the system's needs. Each component acts upon certain norms by grouping and organizing and fulfills certain functions. For these components to ensure the sustainability of the system relies on the terms that the system can change within certain limits, renew itself, and at the same time, by considering the change in the system, each sub-component should be in functional integration and fulfills its roles which are provided by itself and attributed by others. The designer's status and roles, who is an active and essential actor in this system, should be updated by discussing other components and the system's change.

As for the status and role concepts, these two concepts are used interchangeably due to their close relationship. This study, first, it is aimed to explain these two concepts in a sociological context. Later, the study presents the designer's status and the roles provided by himself/herself in the context of the status in historical context through discussion in the literature. The last part of the work, it is aimed to bring the possible future roles of the designers up for theoretical discussion in terms of the possible changes in the system that constitutes the production and consumption of goods and services.

2. Status and Role

In sociology, there are two approaches to the relationship between status and role concepts. While the concepts of status and role are seen as equivalent concepts in the theories and analyses of the Structural-Functional approach, significant differences between these two concepts are introduced in the Symbolic-Interaction approach.

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Although Linton (1936), one of the first names in terms of status and role concepts, limits the distinction between these two concepts only with an academic interest it is necessary to explain why, although both concepts are equivalent, they are expressed as two separate concepts.

This explanation finds its roots in the concept of role. Because, while the role is defined and transferred through human interaction, that is, when the individual deals with a role in the context of his / her relationship with other roles and claims that individuals play and act according to their position with each other in the Symbolic-Interaction approach (Jary & Jary, 2000), it is assumed to be determined by a structure in Structural-Functional approach. However, even this distinction does not eliminate the strong bond between status and role and the effective influence of the system in establishing both concepts. The status is valorization and sense-making of the positions of individuals within the social system by society. According to Linton, status is simply the sum of rights and duties (1936). These statuses determine the behavior patterns of individuals who occupy these statuses (Biddle, 1986); in other words, their roles (Johnson, 2000). Individuals play their roles through specific behavior patterns to perform their rights and duties (Linton, 1936). According to Parsons, the role is the junction point between the individual's personality and the structure of the social system (1951).

In the literature, status is approached in two aspects: attributed and acquired (Linton, 1936). Society determines evaluation criteria in the attributed status, and the individual has neither an effort nor power to change these criteria. Acquired status is obtained as a result of individual characteristics and effort. The value of the statute decreases or increases according to the effort required to reach it. From this point of view, marriage, the political status in democratic societies, and the professions acquired by education and became a dominant status in today's modern-capitalist society are examples of acquired status. Moreover, the fact that professional life occupies an increasingly important place in individuals' lives makes occupational status and related roles dominant in individuals' lives (Moore, 1970). This situation brings the individual's profession to his crucial status, and the profession becomes a useful sociological tool in the analysis of social personality (Fitcher, 1971). Key status is the most expansive window that the individual opens to the world about herself/himself. Society mostly looks at the individual through that window, decides which status is his/her key status, and interprets the individual's other status according to his/her key status.

The key role is the role that belongs to the key status. If the status is considered the sum of rights and duties, the rights and duties presented by the key status define the individual's key role based on a privileged expectation of society. This role becomes the behavior pattern that society uses as the main argument in defining the individual. In a society where the division of labor is common, and the profession is valued, the person's key role is determined by profession, which is his/her key status, in determining role expectations requirements, preferences, and the current situation gain importance. While norms and preferences determine requirements determined by values, the current situation is determined by the socio-cultural and economic environment in which the roles occur. Therefore, as roles cannot be isolated from the socio-cultural and economic environment, the change in these environments leads to changes in roles over time. When we approach the status concept in terms of the design profession, we need to see it as an acquired status because the design profession has an individual effort. Within the design profession framework, there is a wide network of socio-cultural and economic relations from the profession's preparation stage. According to Hall, occupation is the main link that connects the individual to society (1975), and similarly, a significant part of the designer's life is in this related network.

The effort required in the stage of acquiring the profession of design, the opportunities offered by profession, the system of social and economic relations it produces in its environment, the system of values and norms, the body of rules that determine the way it is performed, the position within the social and economic system, and the way it creates a lifestyle for the designer, in general, expose the characteristics of a social institution like other professions. In this respect, the design profession represents a functional public space for designers, which makes a vital contribution to the socio-cultural and economic system's functioning and how a significant part of social reality is produced. A profession is a basic determinant in terms of the social status of the individual and the formation of the reputation level of this status. The profession is a basic determinant in terms of the social status of the individual and the formation of the reputation level of the status. Therefore, the designer's ability to gain high-esteem social status also depends primarily on his ability to carry out a design profession respectfully in coordination with colleagues. This situation depends on developing the system of rules, values, and norms, which pertain to colleagues' role within the framework of the profession's rights and duties and in general positioning of the design profession within the social and economic system. Moreover, these attitudes, norms, and values constitute an essential source of reference in giving the point of view of the nonprofessional social field and society's view of the profession.
The design profession is a component of the system that includes producing and consuming goods and services in economic terms. The designer's role in this system is determined by both the dynamics of the system and the network of relationships with the other actors within the system. The designer's role changes over time as both the variability of the system and the actors of the network of relationships change. This key role is, in a way, a synthesis of variables and the designer's worldview (the attitude and behavior to be developed against the system). Therefore, as the system changes, the designer's worldview changes.

In determining the role of the designer, while norms are sometimes based on formal education and sometimes based on established behavioral rules and standards arising from in-house relations, the values are the ones that define the ideal principles for the right one determined by the world view and which has the more general and abstract nature. As a result, the change in the norm, value, or current state also leads to a change in the key role either attributed to the designer or acquired by the designer.

3 The Roles of Designer

The designer's role can be defined as the activities and operations that are expected from or determined by the designer. Two main determinants influence the roles of designers and how they are shaped. The first of these is the structure of the professional eigenvalues and norms that shape the roles based on the designer's professional status, and the other is the structure of the socio-cultural and economic environment in which the roles occur. The designer is decisive in the first determinant, but in the second, the decisive one is the environment. Any role is the sum of both the designer's role and the expectation of the environment. While this total is sometimes a single adjective, sometimes because it has to play many roles, it is a body of adjectives. According to Merton (1957), there is no single role in society, but a sequence of roles associated with each other and role relationships to complement each other is called a 'role set.' For this reason, the roles within the body of adjectives rather complement each other, and it is expected that there is no serious conflict between them. If there is a conflict, it evolves out of that the designertakes on multiple conflicting roles at the same time (the conflict between the roles), the roles expected from the designer do not correspond to the attitudes, values, and abilities of the designer (person-role conflict), the incompatibility of the expectations of the designer with the expectations of other persons (interpersonal role conflict), role ambiguity or role overloading.

Although this study is not about the conflict between designer roles, when the design literature is examined, it is seen that the designer is generally attributed to role sets rather than a single role. These sets can be in the form of particular umbrella group roles [facilitator; (Morelli, 2007)] that contain many sub-roles in itself as well as different adjectives such as strategy visualizer, core competence prospector, market exploiter, and design process provider; (Seidel, 2000). The diversity of roles within each role set directly defines the role universe's scope (Figure 5). This scope constantly changes under changing conditions over time.

4 Method

4.1 Literature Research, Determination of Roles and Determination of Key Roles

In this study, the evidence-focused literature review method which is proposed by Hagen-Zanker and Mallett (2013) is used for a systematic review of the literature. The basic research question is what the roles are attributed to the designer in the literature. The secondary research question is the change in these roles over time. The following keywords and combinations were used on Google Scholar for Retrieval: ["role of" AND designers], ["designers" AND "role"], ["industrial designers" AND "roles"], ["emerging roles" AND "designers"], ["status of" AND "designer"], ["decade" AND "role" AND "designer"], [new OR "different" AND "roles" AND "designer"]. In the second stage of the retrieval, the Snowballing protocol is applied, the reference lists of the primary sources are examined, and the allowable ones are evaluated. Finally, the same keywords were searched in different search engines (such as working papers, concept notes, donor reports, policy documents, and briefings) in the context of the Gray Literature Capture protocol. The appropriate ones are included in the study. Based on this research, 39 studies are mentioned in this study. The publication dates of the studies are appeared to be 1999-2018. At the end of the first phase of the study, 83 designer roles are listed, which are mentioned in these 39 publications and it is noted how many times each role is remarked in these publications as in Table 1.
The second stage of the study aims to determine the major/key roles of the designers. In the literature, it is determined that there are different approaches to major roles. In the study conducted by Sumter and Bakker (2017), it is seen that the major roles of designers are determined as strategic, coordinator, and functional roles.

<table>
<thead>
<tr>
<th>Row</th>
<th>Role</th>
<th>Authors and Years</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Co-designer</td>
<td>Lee, 2008.</td>
<td>Interpreter</td>
</tr>
<tr>
<td>37</td>
<td>Functional Specialist</td>
<td>Perks, Cooper, &amp; Jones, 2005.</td>
<td>Team Member</td>
</tr>
<tr>
<td>42</td>
<td>Hero</td>
<td>Valtonen, 2005.</td>
<td></td>
</tr>
</tbody>
</table>
Although the authors declare that they have identified these major roles based on the literature, it is seen that this distinction is not justified in the study. When the Design Management literature is evaluated, it is stated that the designers, by nature of the process, operate in terms of institutional and project level (Topalian, 1980), policy and project level (Oakley, 1990), and strategic, tactical, and operational level (Chung, 1992). Moreover, in general, it is seen that designers play roles in both the operational and the managerial roles. In this context, this study determines the major roles as managerial and functional in the first stage.

The diversity of managerial roles draw attention to management literature, so in this study, it is examined how the managerial roles are classified. There is a historically intensive classification effort on managerial roles in managerial literature (e.g. Katz, 1955; Mintzberg, 1973; DuBrin, 2012). When these studies are examined, it is seen that the roles, abilities and mindsets are differentiated in evaluating the qualifications of the manager. Therefore, in the study’s scope, these are focused on that Mintzberg’s 1973 dated study, which includes all these distinctions and generally accepted in the field, and DuBrin’s 1973 dated study replaces ten roles determined by Mintzberg with 17 roles based on changing conditions. In these studies, it is determined that the roles are diversified under the main heads of managing/coordinate/organizing, and obtaining information/cooperation/communication. From this point of view, designer key/major roles within the scope of the study are Creator/Conceptor as functional roles and Conductor/Coordinator as administrative roles and connector as linking roles (Table 2):

<table>
<thead>
<tr>
<th>Designers Key/Major Roles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creator/Conceptor</td>
<td>Seeing and sharing visions for the future and translating these visions into a concrete product rather than higher-level product policy development.</td>
</tr>
<tr>
<td>Conductor/Coordinator</td>
<td>Establishing cooperation and partnership among actors to provide information and ideas, to process and use the information to enable innovation and create an effectively designed product</td>
</tr>
<tr>
<td>Connector</td>
<td>Creating a design network, connecting and balancing the communication of ideas and actors involved in the product development process.</td>
</tr>
</tbody>
</table>

### 4.2 Evaluation of roles in terms of key roles

As most of the detected roles are expressed only as adjectives, it is unclear what they want to define precisely. Most of the roles are stated at the adjective level as a single word. Three methods are applied to determine exactly what these roles refer and their equivalents in terms of key/major roles. In the first method, the adjectives' equivalents, which are attributed to the designers as roles with no basis for conclusions, are researched in business literature. For example, the phrase "storyteller" (Myerson, 2007), a role attributed to the designer, is not properly articulated; it is searched if it has any equivalent in business literature. From the peer sources (e.g., Dennehy, 1999; Guber, 2007), a storyteller's personality traits, talents, and practices are noted, and their relationship with the key/major roles, which are determined in the study, are graded. Roles that are the subject of the second method are limited in referred sources and have single equivalents. For example, the phrase "seducer" (Verganti, 2008), which is a role attributed to the designer, is indirectly articulated as "... these interpreters [also designers] are "seducers," since with their interaction they shape socio-cultural models and influence the meanings, aspirations, and desires of people and users." in the source reference. The explanation of the designer, as a seducer, by only one source, is not found adequate. So, it is searched if it has any equivalent in business literature and from the peer sources (e.g., Örtenblad, 2005), seducer's personality traits, talents, and practices are noted, and their relationship with the key/major roles are graded.

As a third method, the roles mentioned frequently in the referred sources (e.g., the facilitator or interpreter) are evaluated through the explanations in referred sources, and all the commons and differences of each role are considered as a whole. Their relationship with the key/major roles determined within the study's scope is graded. For grading, the sub-headings of each key/major role (roles, skills, and mindset); the classification of Mintzberg (1973) and DuBrin (2012) for key/major roles (Conductor/Coordinator; and Connector); conventional product design process for functional key/major roles are selected at the baseline. The relationship between each attributed role and the key/major role is graded between 1 and 10. As a result, a contingency table (r x c = 3) is obtained. Therefore, the lowest value that a role can take against the key/major roles is 1-point (0 + 0 + 1) and the highest value is 30 (10 + 10 + 10) points.

The method of grading is, in summary, the points that each adjective takes as against the key/major roles. In the grading, the behavior pattern, which is framed by the adjective, is determined based on the adjective’s definition. If we take the storytelling role as an example, storytelling is an action-oriented role- a force for turning dreams into goals, then into a result.
A designer can illustrate any key design concept by this valuable role by storytelling and making information more relevant. Storytelling has a binding effect for key/major Creator/Conceptor role for sharing visions for the future and translating these visions into a concrete product. In the evaluation, the storytelling role received only 5 points. Because sharing product ideas is only a part of the product design process and does not define the whole process alone, on the other hand, under the key/major Connector role, the storytelling scored 8 points.

In the literature, the main emphasis of this narrative role is to communicate with employees and colleagues to motivate, inspire, engage, and lead them. Therefore, this role received 6 points from key/major Conductor role, yet storytelling is a key leadership technique and often the best way for leaders to communicate with people they are leading (Table 3).

Table 3. Scoring of the roles.

<table>
<thead>
<tr>
<th>No</th>
<th>Role</th>
<th>Creator / Conceptor</th>
<th>Conductor / Coordinator</th>
<th>Connector</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>Storyteller</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>Myerson, 2008</td>
</tr>
</tbody>
</table>

4.3. Data analysis

The contingency table was first subjected to correspondence analysis (CA) via SPSS v25 software. CA is an exploratory data analysis technique for the graphical display of contingency tables and multivariate categorical data (Hoffman & Franke, 1986). CA's problem is to find an optimal plot of cross-tabulation in a lower-dimensional space to locate columns, and rows are on the same scale. The CA's main output is bi-plot graphs, which graphically show the relationship between row and column categories which are between cross tables. In Bi-plot outputs, the distance between the notations is based on the chi-square distance. In simple terms, the positions of major/key roles and roles on the coordinate system define these two values' relationships. Each role is located according to its relations with key/major roles. There is no significant data loss in the CA, made in this study (Figure 1).

In the second stage, the hierarchical cluster analysis is performed using the same contingency table (Figure 5). Hierarchical cluster analysis (HCA) is a method for grouping objects, in this case, survey items, into homogeneous groups or clusters. The hierarchical cluster analysis is preferred to determine whether roles fall into clearly separable sets to maximize bi-plot readability. There are numerous HCA methods; the study chose to use Centroid Clustering and Ward Methods to organize data into representative groups based upon similar characteristics. When the dendrogram (a diagram frequently used to show the relationships of similarity between items) observed, the 'clads' arrangement demonstrates which items are most similar to each other. The length of the solid line indicates how similar or dissimilar they are from each other – the greater the length of the line, the more significant the difference.

5 Discussions

5.1 Key roles and their relations with roles; Interpretation of CA

When the contingency tables were subjected to the CA, the bi-plot output in Figure 1 was obtained. Bi-plot output is transferred to Adobe Illustrator software as a point cloud; each role is enlarged through diameter according to the number of references in the literature and colored according to the literature's first citation date. Since each role has a value for key roles, its position is under each key role's vectored effect. Therefore, if any role is equally related to the three key roles, it is located in the centre of the virtual triangle formed by three key roles. When considered from this point of view, roles which are numbered as 6, 16, and 78 (Catalyst, Co-producer, and Synthesizer) are related to each key role. Clusters that are around each key role mean that key role is dominant in surrounding roles. When Figure 1 is examined, all in all, proximity to the coordinate center (0, 0) shows the overall tendency. Divergence means differentiation. From this point of view, it is seen that the key roles, connector, and conductor/coordinator are closer to the center. Therefore, it can be said that especially the current literature centers upon the connector and conductor/coordinator roles regarding the roles of designers. The connector and conductor/coordinator key roles are almost equidistant to the centre, meaning that these two key roles are equally regarded. Moreover, the accumulation in the role distribution between the connector and the conductor/coordinator key roles corroborates this.
Figure 1. Bi-plot of CA of key/major roles and roles.

The facilitator's role (34) and the interpreter (51), which are constantly quoted in the current literature, is a significant signal in this respect. In other respect, most of the other roles are located around these two integrators/umbrella roles. When the key roles are evaluated from the horizontal axis (85.8% of data is acquired from this axis), it is seen that the key role Creator/Conceptor on the axis differs markedly from the Connector and Conductor/Coordinator key roles. In other words, the key roles of Connector and Conductor/Coordinator appear to be closely related to each other. On the other hand, the vertical axis can be explained in several different features. When in the upward motion, intrapersonal roles gain weight, the more decisional roles gain weight downwards. Even on the assumption that we only analyze the role around the key role Creator/Conceptor, we see that some roles which are located below the horizontal axis characterize solo/atomistic design roles (e.g., creator, hero, celebrity, star) which give their design decisions relatively independent. When we go above the horizontal axis, especially in the area between Creator/Conceptor and Connector key roles, we observe the designer roles (team member, co-creator, co-designer) which dominate their own design process but are in contact with other actors. So, on the assumption that there is a line between the Creator/Conceptor and the Connector, it is possible to say that there is progress from a solo/atomistic designer to a collaborative designer towards the connector. Another significant aspect in the vertical axis is the acquisition, processing, and use of information. As they move upward on the vertical axis, the roles give to acquiring knowledge increase, while the roles give on to the processing and use of information become prominent as they move down the vertical axis. From this point of view, the role Connector is more related to acquiring knowledge, while the role Conductor/Coordinator is related to the processing and use of information.

When evaluations are made, many roles are very close to each other even lap over. The first reason is the close meanings of the defined roles. For example, when we consider the roles of the agent of change, empowerer, and facilitator, this issue can be discussed in detail. According to Caldwell (2003), leadership and empowerment are mutually reinforcing components of the change process. However, one of the primary roles of the "change agent" is acting as an external "facilitator" of planned processes of evolutionary change (Beckhard, 1997; Tichy, 1975). Therefore, we see a tight relationship between the agent of change, empowerer, and facilitator. In a way, the change agent should empower the actors as a fundamental activity.

On the other hand, an agent of change should also be a facilitator for change. In these circumstances, it is difficult to differentiate each from the other, yet this blurring boundary is a critical issue in conceiving differences between deemed designer roles. The second reason is that some role definitions are general/umbrella, and some are specific.

For example, the concept of entrepreneurship, a general concept, describes many personality traits and roles (e.g., Visionary). From the designer who is considered an entrepreneur, it is expected to meet some of these specific features and roles.

Moreover, such as the facilitator role, many of these specific roles can be subordinate roles of another general/umbrella role since many general roles involve common sub-roles, an entrepreneurial act as a facilitator, and vice versa. Another reason is the inflationary attitude of the researchers in the literature.
The fuzzy relationship between roles and the concern of defining something new leads to many attributed roles. If we try to illustrate this situation through the role of entrepreneur designer, there is no obstacle for us to define the designer as an intrapreneur (Pinchot, 1984), which also identifies the internal entrepreneur. If we attribute the intrapreneur role to the designer, according to Pinchot (1984), this designer can also be a dreamer; a secret weapon who is the one that triggers the initiative due to design ideas within the firm. Another reason is that some roles are admitted as superior to others. If there is a superior role perception in the role’s definition, it is observed that the superior one is preferred.

For this reason, for example, the frequency of using the "co" prefixes particularly noticeable in the literature. This prefix, which instead means together/with, gives new meanings, sometimes superiorities to root word (e.g., creator, co-creator; producer, co-producer; promoter, co-promoter; communicator, co-communicator). Since being open to cooperation and support is more favorable than being atomistic in common perception, it is preferred to be not only the creator as a designer but also the co-creator who supports other creators and helps them to make their ideas a reality. Another example can be given through the user experience. The designer can be an end-user expert who is a more static and observational role. Nevertheless, the also designer plays proactively in the role of creators of an end-user expert. Furthermore, the designer plays the role enhancer of user experience in the context of the delegation. In fact, in the context of the role of guardians of the user experience, both the patronage and spokesmanship roles can be accepted. When the visibility/definition of these roles in the literature is examined historically (Table 1), each of them seems to turn into more inclusive, more collaborative, and more proactive ones over time.

5.2 Hierarchical clustering between roles

Within the scope of the analysis, two HCA were conducted for the classification of roles among themselves. Here, each observation is considered as a single element cluster (leaf). Then, at each step of the algorithm, the most similar clusters are merged into a larger one. This process is continued until all elements are a single large cluster (root) to plot a dendrogram. Dendrogram demonstrations are more accurate at lower levels. As we move from leaves to roots, relationships weaken, clusters become obscure and heterogeneous. Another piece of information in the dendrogram is to focus on the height at which two objects come together. In the example above, we can see that 5 and 6 appear most similar because the height of the link which connects them is the smallest. The following two most similar objects are 1 and 2. The first one of these analyses is Centroid Linkage Clustering, which calculates all the distances between cluster 1 centroid (centroid vector with p elements) and cluster 2 centroid. As a clustering criterion, the mean distances between the units in a set and the other cluster units are used. In the Centroid Linkage Clustering, clusters are connected by minor variances. As a result, smaller but similar sets are obtained. Figure 2 shows the dendrogram created by the Centroid Linkage Clustering method. When Figure 2 is examined, significant results can be obtained. The first of these results is the formation of three main clusters, consisting of different clads. The first cluster consists of the number (3, 19); (42, 73, 7); (37, 54); (62, 70); (28, 64, 25); (63, 20) roles. These roles are actually referring to the solo/atomistic designer, who is in close contact with the key/major role of the Creator/Conceptor, in which the designer is at the heart of the creative process and directly applies in practice. For instance (42, 73, 7) clad, "hero", "star" and, "celebrity" designer may support this claim. It is necessary to discuss why some roles form a clad and the difference between them in this clad.

![Dendrogram using Centroid Linkage](image)

Figure 2. Dendrogram of roles by using Centroid Linkage
For example, a hero is the one that does what needs to be done, without any thought of acclaim. Although he or she may also do good things, the star is a spotlight-seeking one who contributes to what he/she does and is well-known to the public. On the other hand, a celebrity is famous, but who does not necessarily have to be well talented or good at something. A designer may be a celebrity, but being a celebrity may not come from her/his superior abilities, perhaps due to the facilitative network she/he has own. However, (3, 19) clad shows a more artisan designer. When the second cluster is examined (between 6 and 31), it is seen that these roles define the team member (79) who is actively communicating with the process actors. The designer within this cluster is a designer in relations rather than an atomistic individual. Based on the design (10, 24, 47, 9 10), this designer comes together with other actors, listens to them, and takes the lead in some matters, such as the experience. As stated here, the designer is in contact with the actors refutes the acceptance of the soloist/atomistic designer. In other words, this type of designer is aware of the actors’ interests in the design process and plays the collector role (6, 78) to unite interests. As a social visionary (72) designer oversees and inspires knowledge (48, 73), unveils knowledge, questions (44, 67), speaks for and disseminates information. The concept of experience is prominent in this cluster. It draws the attention that the designer communicates with the end-user (31, 42, and 32) and establishes an effective environment for disclosing their experiences. When the third cluster is examined, it is seen that the managerial and coordination roles gain weight. In this cluster, the designer is not only a tool but also a facilitator and an advisor. As a hub (43), the designer plays the interpersonal role and the roles of decision-based entrepreneurship (33), problem-solving, mediation, intermediacy and facilitation, and unification. This role is instead directed at the future and creating it. As such, this cluster is more likely to be a Conductor/Coordinator. Therefore, the facilitator and interpreter roles, which are frequently quoted in the literature, are included in this cluster. What a facilitator designer (34, 35) does is the plan, guide (41), navigate (58), mediate (57, 50), and manage (60, 26, 80, 61, 29, 27, 65, 17) the overall design process to ensure that the group’s objectives are effectively met (69 66, 22, 18, 53), with clear thinking (23), good participation (43, 49,11) and full buy-in from every empowered (30) and seduced (71) actors that involved. The Ward method is used in the second cluster analysis because it provides ease of demonstration, creates an understandable and simple dendrogram, and relatively equal size clads (Figure 4). Ward, the connection clustering method is based on deviations from the center, i.e., variances, in calculating the distance between the two clusters. Ward clads represent a more heterogeneous distribution because they are larger. Heterogeneity makes it challenging to describe the elements which constitute the clad as a whole. At this stage of analysis, the Ward method’s implementation is preferred for the ease of demonstration of the clusters in the bi-plot output. When this Ward dendrogram is examined, it is seen that there are seven clusters in terms of designer roles. Clusters 5 and 7 from these seven clusters refer to functional designers. This designer is directly involved in the product design process. However, there is a significant difference between the 5 and 7 clusters in terms of the designer role. While cluster 5 refers to the solo/atomistic designer, the designer in cluster 7 has a limited relationship with the design actors in design processes.

![Dendrogram](image)

**Figure 3. Dendrogram of roles by using Ward Method.**

In the area in which the designer is in the center, the designer is in a protagonist position, but the designer has to act as a cooperative or collaborator for the process. When the other clusters are analysed through the classification of Mintzberg (1973) and Dubrin (2012), the number 6 cluster is the informational designer role based on the acquisition of information. In this cluster, the designer aims to provide detailed and disaggregated data addressing the common needs/experiences of involved actors to support operations, management, and decision-making functions in the design process. Cluster 1 should be evaluated under the title of an informational role in which this data is processed.
In this cluster, the designer changes, interprets, and generalizes the accumulated data to design information to make a response suitable within the context of an objective design problem. Clusters 2 and 4 are interpersonal roles. In cluster 4, the designer connects the process actors to foster individual and team achievements. In cluster 2, he takes on a central and pioneering role and provides and facilitates the necessary conditions for effective and result-oriented cooperation and highly targeted communication between the actors. In clusters 2 and 4, the designer does not necessarily have to be a communicating group leader. Sometimes the designer may be a "dumb" hub, a passive center of communication that passes anything received from one actor to all others, or a semi-intelligent effective router that learns which actors are on which connection to facilitate information traffic only goes where it needs to. Cluster 3 indicates the decisional role of the designer. This decision-making role is more related to the use of information. In this cluster designer acts as a leader of the design process, initiates new projects, spots opportunities for the future encourages change and innovation. As it is one of the most crucial, difficult, and rigorous parts of any design activity, it is important to note that designers may not perform equally – or with equal frequency – all the roles in cluster 3.

5.3 The combination of CA with HCA

In the following part of the analysis, CA and Ward-based HCA tables are combined. The roles covered by each cluster determined by the Ward method are depicted as dashed lines and numbered according to Figure 3. According to Ward HCA, the solo/atomistic designer (C5) is clustered around the Creator/Conceptor key/major role. The role of the solo designer concentrates when moving downwards in the vertical axis in cluster C5. From the Creator/Conceptor key/major role to the Connector key/major role, the solo / atomistic designer profile is evolving towards the collaborative designer (C7), who collaborates in design processes. The designer in the role of C7 is more cooperative in terms of knowledge acquisition and sharing than the C5. When the subject is evaluated in terms of design knowledge, an interesting situation arises. In the C5 cluster, data, information, and knowledge belong only to the designer. In the C7 cluster, there is a different designer who seeks information and shares expert knowledge. The designer in the C6 cluster acquires data, while C1 processes data and acquires information, and in C3 uses the information and decides. The acquisition and use of information increase towards C6-C1 and C3. The roles of C4 and C2 indicate interpersonal roles. The role of C4 is the integrator, and the role of C2 is the facilitator. When a general assessment is made, it can be said that there is a role transition from C5 to C2. The designer moves from a functional role to a managing role, bringing process actors together and facilitating cooperation.

![Figure 4. The combination of CA and Ward-based HCA tables.](image-url)

The most important feature of C2 is the data acquisition and facilitating position in the use of information for decision making. In this context, the principal role of the designer is to associate actors with each other to gather the basic knowledge of the design, to create suitable environments for the information production, to convey the information to the relevant actors, to observe, use and make use the information in the design and decision-making processes. C2 is the closest to the centre (0, 0) due to its common relationship with the three key roles.
5.4 Evaluation through role sets

Role conflict occurs if the individual encounters conflicting elements within a single role or role set. Considering that the designer has different role sets, the role burden arising from playing many roles may cause role conflicts. In light of the data obtained from the literature, there are 83 roles defined for the designer. As long as the designer occupies the status, he has to fulfill the requirements of it. However, each role requires different expectations. The designer, who is confronted with the demands of too many roles, is less likely to satisfy them. The designer can play each or several roles of the 83 defined roles. However, if the designer has more than one role with incompatible requirements, the conflict arises. Therefore, the compatibility of roles in role sets that are defined for the designer should be discussed. In the context of role conflict, role sets of the authors in the literature (Seidel, 2000; Manzini, 2009; V&A, 2008; Lee, 2008) are examined. The role sets which the authors define are accepted as a cluster and demonstrated in the bi-plot output (Figure 5).

![Figure 5. Analyze sample role sets by bi-plot output.](image-url)

In Figure 6, Seidel's (2000) role sets are demonstrated as A, V & A (2008) role sets are demonstrated as B, Lee's (2008) role sets are demonstrated as C, Manzini's (2009) role sets are demonstrated as D (dashed). Seidel's role sets consist of the roles of strategy visualizer (77), core competence prospector (18), market exploiter (55), and design process provider (27). According to the CA plot, Seidel roles constitute a distinct cluster. These roles are located between the Connector and Conductor/Coordinator key/major roles and are close to the center. It can be said that Seidel gives weight to interpersonal roles in role determination and place the designer in an interdepartmental position that guides the design process. The roles which V&A determines are celebrity (7), collaborator (11), catalyst (6), and synthesizer (82). It is thought that celebrity role differs from other roles since it refers to the solo designer. Although it is speculative, it can be said that market practices inspire the role of celebrity. However, the roles of collaborator, catalyst, and synthesizer are in a more distinct cluster. When these three roles are evaluated in terms of design knowledge, a designer discourse supports the information-seeking processes and makes the obtained helpful information. Lee's roles include design developer (24), design facilitator (23), and design generator (25).

When the roles of Lee are examined, it can be said that cooperation and participation have a central role in the designer profile. Considering the size of the area it covers, it has a designer profile that regards all kinds of actors (professionals, society, and design society) who can contribute to knowledge. Manzini's roles are demonstrated as dashed. The roles of Manzini include, consistently, facilitator-based interpersonal roles and decision-based administrative roles. The roles of Manzini describe a supportive and engaging designer profile. When the role sets of the authors are analyzed through CA analysis, it is seen that each one consists of coherent roles within itself. Each author's role set generates relatively consistent and narrow polygons that expose a series of consistent behavior patterns between roles. The proximity of the relationship network within each role in the role set prevents the potential role conflict. Other roles within the polygons which are not determined in the role sets define the possible roles that the designer can play. The concept of time is another reason that causes the role conflict, which occurs due to the role burden. Simultaneous or sequential play of defined roles is determinant in role burden and conflict. Considering that there are different role sets that the designer can play, the role burden arising from the simultaneous assumption of multiple roles causes role conflicts.
Therefore, a role set with a wide range of polygonal space may not cause conflict if the roles can be played sequentially through the design process.

6. General considerations

At the beginning of the study, the status and role concepts are defined as separate but interrelated concepts. Moreover, the design profession is defined as the dominant status that the designer acquired due to his labor and effort. Every person, including the designer, has multiple assigned and attributed statuses simultaneously, and these statuses are related to each other, and they often do not make sense alone. In simple terms, a designer who occupies the designer's status has a defined task and can also occupy an administrator's status. Therefore, any status occupied by the designer can create a series of spectacular statuses. Roles are individuals' behaviors by their status. So, the statuses are occupied, but the roles are played. The difference in occupied status differentiates the roles that need to be played. These roles affect the attitude and behavior of the individual. Within the scope of the study, 83 different designer roles are determined in a numerical sense. The existence of this high number of roles has many reasons. The first of these reasons arise from the existence of different statuses occupied by the designers. The different status sequences indicate the sum of the statuses which a designer has at a given moment, and the status sequences can change conditional throughout the designer's professional life. These changes give rise to new roles. A designer who plays a team member's role at the beginning of professional life may have to play different roles as the designer's position within the organization changes. Another reason is the change in the socio-cultural and economic environment in which the designer operates. Since the designer's roles cannot be abstracted from the socio-cultural and economic environment in which they exist, the change in these environments can lead to changes in roles over time. Different socio-cultural and economic environments around designers can create different abstracted role expectations. These expectations, which task different responsibilities, rights, and behaviors to the designer, constitute a designer's role. However, the role play varies according to personality characteristics, time, or environmental conditions. The designer adds characteristics to behaviors that are required by these roles, and therefore, the designer is distinguished from other designers in similar status by specific role behaviors and roles diversify. Another reason is the reinforcement between roles. Role reinforcement refers to the fact that roles in different statuses reinforce or support each other. Some umbrella roles that the designer occupies lead to the determination of subordinate roles which are derived from them in the literature. A designer in the facilitator's role may also have to play the subordinate roles that support being a facilitator.

When a general evaluation is made, it is seen that the most important factor in defining the role of the designer is information. When the evaluation is made in terms of information, it is seen that information creates two basic separations in determining designer roles. In the first of these separations, the information immanent in the designer, the designer has the necessary knowledge for the work, so the designer is atomistic. The second type of designer needs to relate to other actors and context knowledge to better practice the profession. The designer roles that are not atomistic vary depending on the acquisition, processing, and production of information, informed decision-making, and the use of the obtained information. Contact with other actors takes place in the micro and macro environment through information. Some designer roles, for example, team members, are in touch with micro-level environmental information sources. In contrast, umbrella roles such as facilitators play environmental-resource-based roles at the macro level, covering all kinds of data outside the organization. Design knowledge is a prominent variable in the differentiation and diversification of designer roles.

References


