ITU A|Z
VOL:11, NO:1, 174-184, 2014-1

A statistical data analysis for increasing the kitchen design performance

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Received: January 2014 *Final Acceptance: April 2014*

Abstract:
The kitchen space is one of the most studied areas for increasing the interior design performance. This is because of; being the most important working area compared to other spaces and expected to show a superior performance in terms of many criteria. The scope and purpose of the study was identified as; to obtain the statistical data describing mathematical correlation between the kitchen layout and total floor area and to present the results belonging to these data in the manner of an analysis table that will help designer to decide correctly at the stage of determination of kitchen layout. Meanwhile at the beginning, a literature survey was conducted for determination of what all kitchen layouts are as the study methodology. Later based on these kitchen layouts, 1.309 kitchen projects were examined and statistical data were obtained belonging to each projects' total floor area and kitchen layout. At the last stage, data analysis table was created that will help designer to determine the kitchen layout by identifying mathematical correlations between these statistical data. Through this study, designer can see how mathematical correlation is available between kitchen layout and total floor area over the statistical results. This will also enable the realization of a high design performance project that will help to make a more correct decision in determination of kitchen layout.

Keywords: *Kitchen design performance, kitchen layout, relationship between floor total area and kitchen layout.*

1. Introduction

It is a reality also finds expression in the literature that to take into account now the developing and changing conditions in the area of interior design and applications and to head towards the restructuring works in this direction has become inevitable. In this approach, rethinking of the entire process is inevitable in the context of *"performance based design"* and identification of one of the key concepts as *"performance".*

Performance is a measurable fact. It is important that through what level of performance and according to which criteria the achievement of a purpose is carried out (Arslan and Kanoğlu, 2010). Performance for interior design has become one of the main issues discussed in recent years (Christine, 1992).

And one of the most studied areas for increasing the interior design performance is the kitchen space. The reason for this is, being the most important working area compared to other spaces and being expected to show a superior performance in terms of many criteria such as functionality, durability and hygiene. It was observed in the researches conducted that although an average of two hours are spent during the day in the kitchen, within this time the cabinets are opened and closed more than 80 times and different functions are repeated at least 50 times (Dynamic Space, 2008). Furthermore, the space which is renovated mostly by 34% within the house and has the most expensive design cost is kitchen (Amana, 2009; Edic and Edic, 1999). In addition to all of these, the designer is confronted with the kitchen space as an area has to be resolved in almost all projects.

When we look at other studies conducted on kitchen design performance, it is seen that kitchen design criteria identified for disabled users by Cline (2006) scrutinize the performance. Meanwhile, Rivet's (2009) study is related to the performance of kitchen ventilation systems. Lamkins (2011) examines the performance of sink systems. Panwar (2009) evaluates the design and performance regarding the efficient gas use in cookers. O'Heir (2007); Anonymous (2004) and Anonymous (1999) emphasize that the use of industrial products equipped with digital technologies in kitchens will increase the design performance of this space. Cooking manners depending on the age of users were discussed in the study of Lyon et al. (2011) and in this context design performances of kitchens were examined thoroughly. Fishwick (2006) makes suggestions for improving the performance of kitchen in terms of security. When the studies of Asensio and Ubach (2003); Baden-Powell (2005); Beazley (1999); Cerver (2006); Conran (2005); David (1994); Edic and Edic (1999); Jankowski (2001); Jankowski (2001); King (2006); Lovett (2006); Rand and Perchuk (1991) were examined, it is observed that they described fundamental design principals of the project planning process for increasing the performance of kitchen design. Meanwhile, the standards of human sizes for increasing the interior design and kitchen design performance and design criteria based on these sizes are mentioned in the studies of Grandjean (1973); Panero and Zelnik (1979); Pheasant (1996); Rymala(2011) and Salvendy, (1997).

As a result of all these researches, it was found that scientific studies achieved for increasing the kitchen design performance are basically divided into two groups. The first group is those related to performances of industrial products of the kitchen. And the studies in other group describe the basic design rules for increasing the kitchen design performance.

One of the most essential decisions should be made during the kitchen design process is the determination of *kitchen layout* (Conran, 2005; Jankowski, 2001; Rand and Perchuk, 1991). To make this decision properly will significantly enhance the design performance of the kitchen. When we look at the studies regarding the kitchen design performance defined above, it was observed that only fundamental design principals about determination of kitchen layout were described, but there was not any scientific data based on the statistical results belonging to this subject. For the purpose of remedying these determined deficiencies, within the scope of the study first it was researched which factors are effective on determination of *kitchen layout.* As a result of these researches conducted; it was seen that the aforementioned factors were found to be user requirements (Arcan and Evci, 1992; Kıran and Polatoğlu Baytin, 2006; Korur et al., 2006), physical

properties of the place (Altın, 2008; Yazıcıoğlu, 2010), factors concerning the equipment, actions done in kitchens, the sequence of actions, working zones (Anonymous, 2009) and budget (Patterson, 2009).

The user requirements describe the expectations from the environment of the person who will use the spaces. These requirements are separated into two groups as physical and psycho-social (Kıran and Polatoğlu Baytin, 2006). Physical user requirements are classified as spatial, thermal, auditory, visual, health and safety requirements. And the psycho-social requirements are confidentiality, behavioral, aesthetic and societal requirements (Arcan and Evci, 1992).

And the physical properties of the space which are effective on determination of kitchen layout are classified as total floor area, horizontal and vertical dimensions of the space, relation of the space with other spaces and outside, status of plumbing, out of standard circumstances in the space and the situations requiring structural change (Altın, 2008; Yazıcıoğlu, 2010).

And the factors concerning the equipment which is a sub-system of the spatial requirements are; equipments sizes and varieties, equipment layout, energy use, equipment-human relation (Anonymous, 2009).

The actions done in kitchens, the sequence of actions and working zones, which are effective in determination of kitchen layout; involve the separation of each action belonging to this space into sub-actions one by one and the description of requirements of all sub-actions (Anonymous, 2009).

And the budget which is effective in determination of kitchen layout, is another important factor needed to be known at the beginning by the designer. Because, no matter how accurate the project is designed, if it overspends the budget, it can't go beyond just remaining on the paper (Barbaran, 2010). Patterson (2009), in the manner of supporting this thought, also argues that lower and upper limits of the budget form the basis for preparation of kitchen project.

The factors effective in determination of kitchen layout explained above are described briefly as in Table 1.

A quite comprehensive and long-running study is needed for creation of scientific data which will help the designer for all these factors effective in determination of kitchen layout in Table 1 and improving the kitchen design performance in this regard. Therefore, scope of the study was limited only by the factor of *total floor area* which is effective in determination of *kitchen layout* and being a sub-component of physical properties of the kitchen space. In this context, it will be worked to obtain the statistical data allowing designer to see the correlation between the *kitchen layout* and *total floor* area within scope of the study.

2. Purpose and methodology

The purpose of the study is; to obtain the statistical data describing mathematically the correlation between kitchen layout and total floor area and to present the results of these data in the form of an analysis table which will help designer to make correct decision at the determination stage for kitchen layout. A literature survey will be carried out for identification of

what all kitchen layouts are at the first stage as the methodology of the study in line with this purpose defined. Later based on these kitchen layouts defined, 1.309 real kitchen projects obtained from a firm having dealerships in different cities of Turkey will be examined and statistical data will be derived for each projects' total floor area and kitchen layout. And at the final stage of the study, a data analysis table will be made which will help designer for determination of kitchen layout by describing the mathematical correlations among these statistical data.

Table 1. *The factors which are effective in determination of kitchen layout.*

The Factors Which are Effective in Determination of Kitchen Layout		
User requirements	Physical user requirements	Spatial requirements Thermal requirements Auditory requirements Visual requirements Health requirements Safety requirements
	Psycho-social user requirements	Confidentiality requirements Behavioral requirements Aesthetic requirements Societal requirements
Physical properties of the area	Total floor area Horizontal and vertical sizes of the area Relationship of the area with other areas Relationship of the area with outside Installation status Out of standard circumstances in the area The situations requiring structural change	
Factors related to the equipment	Equipment sizes and sorts Equipment layout Energy usage Equipment-human relations	
Actions done in kitchens, sequence of action, working zones	Separation of each action at the kitchen into sub-actions one by one and description of requirements for all sub-actions	
Budget	Determination of lower and upper limits of the budget allocated for kitchen design and application	

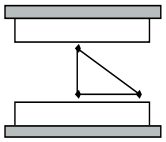
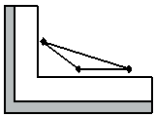
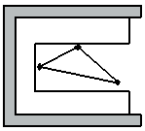
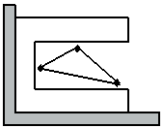
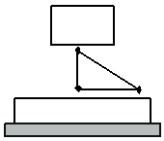
3. Determination of kitchen layouts

In the literature survey of how types of kitchen layout could be defined in the model we learned that King (2006), as single line, gallery, L-shaped, U-shaped, peninsula and island; Jankowski (2001), as L-shaped, U shaped, gallery, peninsula and island; Beazley (1999), as one-wall gallery, two-wall gallery, L-shaped, U-shaped and island; Lovett (2006), as one-wall, gallery, L-shaped, U-shaped, peninsula and island; Asensio and Ubach (2003), as

linear, L-shaped, U-shaped and island; Baden-Powell (2005), as in-line, gallery, L-shaped, U-shaped and island. A study of types of layout that are defined differently in other sources showed that these could be grouped as indicated in Table 2 (Yazıcıoğlu 2011: 621).

In the next stage of the study, 1.309 real kitchen project will be examined on the basis of kitchen layouts defined in Table 2 and firstly total floor areas, then plan type data belonging to these spaces will be obtained.

Table 2. *Types of kitchen layout.*

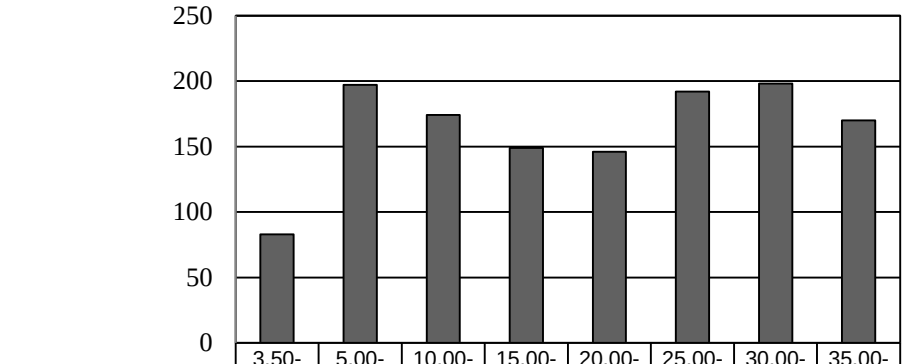
Onewall	**Corridor**	**L Shaped**	**U Shaped**	**Peninsula**	**Island**
One-wall gallery Single line Linear In line	Two-wall gallery Gallery				
					
The type of kitchen designed so that the main areas of activity* are along one wall (Yazıcıoğlu, 2010).	The type of kitchen designed so that the main areas of activity are along two opposite walls (Yazıcıoğlu, 2010).	The type of kitchen designed so that the main areas of activity are along two intersecting walls (Yazıcıoğlu, 2010).	The type of kitchen designed so that the main areas of activity are along the three walls of the kitchen (Yazıcıoğlu, 2010).	The type of kitchen designed so that part of the counter is detached from the wall taking the shape of a peninsula (Yazıcıoğlu, 2010).	The type of kitchen designed so that one or more of the main areas of activity are at the center of the room (Yazıcıoğlu, 2010).

4. Obtaining statistical data for total floor area and kitchen layouts

The first stage related to obtaining statistical data is calculation of total floor areas of kitchens in all projects. It is necessary to define the expression of *"total floor area"* as a priority for not making errors in these calculations. As a result of literature surveys; it was observed that total floor area is defined as closed net area used for the purpose of kitchen, and for open kitchens this definition is regarded as a place limited with kitchen furniture (Conran, 2002).

The areas of kitchen spaces in 1.309 projects were calculated on an individual basis by means of ArchKitchen software in accordance with this definition made regarding the total floor area and it was seen that the numerical distribution of data obtained was as in Figure 1 (Yazıcıoğlu, 2011: 620). The reason for preference of the ArchKitchen software in these studies is because of the firm whereby the projects were obtained is using the same software for presentation of kitchen projects and for orders and all kitchen projects belonging to the firm are readily available as three-dimensional in the software. For this reason, data collection studies were carried out by utilizing the ArchKitchen software instead of doing by hand and in this way a significant time saving was achieved.

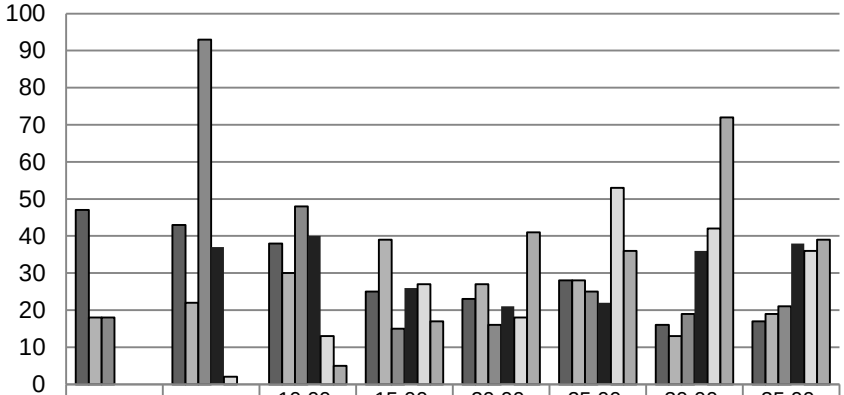
And when proceeding to the stage of obtaining kitchen layouts, total floor area intervals in Figure 1 were taken as basis and again kitchen layouts were determined for each projects' out of 1.309 projects through the medium of ArchKitchen software. It was also found that the distribution of kitchen layouts according to total floor areas was as in Figure 2 in accordance with



	3,50-4,99 m2	5,00-9,99 m2	10,00-14,99 m2	15,00-19,99 m2	20,00-24,99 m2	25,00-29,99 m2	30,00-34,99 m2	35,00-42,00 m2
Total Project Number	83	197	174	149	146	192	198	170

Figure 1. *Distributions of kitchen total floor areas.*

all data obtained (Yazıcıoğlu, 2011: 621).



	3,50-4,99 m2	5,00-9,99 m2	10,00-14,99 m2	15,00-19,99 m2	20,00-24,99 m2	25,00-29,99 m2	30,00-34,99 m2	35,00-42,00 m2
Onewall	47	43	38	25	23	28	16	17
Corridor	18	22	30	39	27	28	13	19
L Shaped	18	93	48	15	16	25	19	21
U Shaped	0	37	40	26	21	22	36	38
Peninsula	0	2	13	27	18	53	42	36
Island	0	0	5	17	41	36	72	39

Figure 2. *Distributions of kitchen layouts according to total floor areas*

5. Creation of the data analysis table which will help designer to decide accurately at the stage of determination of kitchen layout

When the statistical data in Figure 2 obtained in a previous stage of the study is evaluated systematically, a data analysis table which designer can benefit while determining the kitchen layout (Table 3).

Table 3. *The data analysis describing the correlation between the kitchen layout and total floor area.*

Total Floor Area	Kitchen Layout Data Analysis
3,50-4,99 m^2	• Even if the area opens on to the living room, U shaped, peninsula and island type kitchens are not applied in any way. • The most applied kitchen layout is onewall type by 56,6%. • Corridor and L Shaped kitchen are used by 21,6%.
5,00-9,99 m^2	• Island type kitchen is never applied. • The most applied kitchen layout is L Shaped one by 47,2%. • The least applied kitchen layout is peninsula type by 1%.
10,00-14,99 m^2	• The most applied kitchen layouts are L Shaped by 27,5% and U Shaped by 22,9%. • The least applied kitchen layouts are island type by 2,8% and peninsula type by 7,4%.
15,00-19,99 m^2	• The most applied kitchen layout is corridor type by 26,1%. • The least applied kitchen layout is L Shaped by 10%.
20,00-24,99 m^2	• The most applied kitchen layout is island type by 28%. • The least applied kitchen layout is L Shaped by 10,9%.
25,00-29,99 m^2	• The most applied kitchen layout is peninsula type by 27,6%. • All layouts excluding peninsula layout are applied at percentages closer to each other ranging from 11,4 to 18,7.
30,00-34,99 m^2	• The most applied kitchen layout is island type by 36,3%. • The least applied kitchen layout is corridor type by 6,5%.
35,00-42,00 m^2	• The most applied kitchen layouts are U Shaped, peninsula type and island type within the percentage of 21,1-22,9%. • The least applied kitchen layout is onewall type by 10%.
3,50-19,99 m^2	• The most applied kitchen layout is L Shaped. • The least applied kitchen layout is island type.
20,00-42,00 m^2	• The most applied kitchen layout is island type. • The least applied kitchen layout is L Shaped.
3,50-42,00 m^2	• As long as the area increases, onewall kitchen layout application rate decreases. • As long as the area increases, peninsula and island type kitchen application rates increase. • The most applied kitchen layout is L Shaped. • The least applied kitchen layout is peninsula type. • Within the range of this area, onewall type kitchen is applied mostly for the area range of 3,50-4,99 m^2 • Within the range of this area, corridor type kitchen is applied mostly for the area range of 15,00-19,99 m^2 • Within the range of this area, L Shaped kitchen is applied mostly for the area range of 5,00-9,99 m^2 • Within the range of this area, U Shaped kitchen is applied mostly for the area range of 10,00-14,99 m^2 • Within the range of this area, peninsula type kitchen is applied mostly for the area range of 25,00-29,99 m^2 • Within the range of this area, island type kitchen is applied mostly for the area range of 30,00-34,99 m^2

6. Conclusions

With this study, designer can observe in what way the mathematical correlation between the kitchen layout and total floor area is present through the statistical results, at the preliminary stage where there is very limited information about the kitchen and still never project study is done. And this will help designer in determination of kitchen layout which is one of the most important stages of kitchen design and will ensure to make a more accurate decision in this regard. A properly determined kitchen layout will enable the realization of a kitchen project with higher design performance.

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Mutfak tasarım performansının artırılmasına yönelik bir istatistiksel veri analizi

İç mekan tasarımı ve uygulaması alanında artık gelişen ve değişen koşulların dikkate alınmasının ve bu yönde yeniden yapılanma çalışmalarına yönelinmesinin kaçınılmaz hale geldiği literatürde de ifadesini bulan bir gerçekliktir. Bu yaklaşımda anahtar

kavramlardan birinin "*performans"* olarak belirlenmesi ve "*performans tabanlı tasarım*" bağlamında, tüm sürecin yeniden düşünülmesi kaçınılmazdır.

Performans, ölçülebilir bir olgudur. Bir amaca erişimin hangi ölçütlere göre ne düzeyde bir performansla gerçekleştirildiği önemlidir. İç mekan tasarımında performans son yıllarda ele alınan temel konulardan biri olmuştur. İç mekan tasarım performansının artırılmasına yönelik üzerinde en çok çalışılan alanlardan biri ise mutfak mekanıdır. Bunun nedeni, diğer mekanlara kıyasla en önemli çalışma alanı olması ve işlevsellik, dayanıklılık, hijyen gibi bir çok kriter açısından üstün bir performans göstermesinin beklenmesidir. Yapılan araştırmalarda mutfakta gün içerisinde ortalama iki saat geçirilmesine rağmen bu süre zarfında dolapların 80 kereden fazla açılıp kapatıldığı ve birbirinden farklı işlevlerin en az 50 kez tekrarlandığı görülmüştür. Ayrıca konut içerisinde % 34 oranla en çok yenilenen ve tasarımı en pahalıya malolan mekan mutfaktır. Tüm bunlara ilave olarak mutfak mekanı neredeyse tüm projelerde çözümlenmek zorunda olan bir alan olarak tasarımcının karşısına çıkmaktadır.

Mutfak tasarım performansının artırılması konusunda yapılan çalışmalara bakıldığında Cline' in engelli kullanıcılar için tanımlanmış olan mutfak tasarım kriterlerinin performansını irdelediği görülmektedir. Rivet' in çalışması ise mutfak havalandırma sistemlerinin performansıyla ilgilidir. Lamkins, eviye sistemlerinin performanslarını incelemektedir. Panwar, ocaklardaki etkin gaz kullanımıyla ilgili tasarım ve performansı değerlendirmektedir. O'Heir, dijital teknolojilerle donatılmış endüstriyel ürünlerin mutfaklarda kullanılmasının bu mekanın tasarım performansını artıracağını vurgulamaktadır. Lyon ve diğ.' in çalışmasında kullanıcının yaşına bağlı olarak yemek pişirme biçimleri değerlendirilmiş ve bu bağlamda mutfakların tasarım performanları irdelenmiştir. Fishwick' in çalışmasında mutfağın güvenlik açısından performansının artırılmasına yönelik önerilerde bulunmaktadır. Asensio ve Ubach, Baden-Powell, Beazley, Cerver, Conran, David, Edic ve Edic, Jankowsk, King, Lovett, Rand ve Perchuk' ın çalışmaları incelendiğinde bunların mutfak tasarım performansının artırılmasına yönelik olarak projelendirme sürecine ait temel tasarım prensiplerini anlattıkları görülmektedir. Grandjean, Panero ve Zelnik, Pheasant, Rymala ve Salvendy'in çalışmalarında ise iç mekan ve mutfak tasarım performansını artırmaya yönelik olarak insan ölçülerine ait standartlar ve bu ölçülere bağlı tasarım kriterlerinden bahsedilmektedir.

Tüm bu araştırmaların sonucunda mutfak tasarım performansının artırılmasına yönelik ulaşılan bilimsel çalışmaların temel olarak iki gruba ayrıldıkları tespit edilmiştir. İlk grup mutfağa ait endüstriyel ürünlerin performanlarıyla ilgili olanlardır. Diğer gruptaki çalışmalar ise mutfak tasarım performansının artırılmasına yönelik temel tasarım kurallarını anlatmaktadır.

Mutfak tasarım süreci içerisinde verilmesi gereken en temel kararlardan biri *mutfak plan tipinin* belirlenmesidir. Bu kararın doğru verilmesi mutfağın tasarım performansını önemli derecede artıracaktır. Yukarıda tanımlanmış olan mutfak tasarım performansıyla ilgili çalışmalara bakıldığında *mutfak plan tipinin* belirlenmesi konusunda sadece temel tasarım prensiplerinin anlatıldığı, ancak bu konuda istatistiksel sonuçlara dayanan hiç bir bilimsel verinin bulunmadığı görülmüştür. Tespit edilen bu eksikliğin giderilmesi amacıyla çalışma kapsamında, ilk olarak mutfak plan tipinin belirlenmesinde etkili olan faktörlerin neler oldukları araştırılmıştır. Yapılan bu araştırmaların sonucunda sözkonusu faktörlerin; kullanıcı gereksinmeleri, mekanın fiziksel özellikleri, ekipmana ilişkin faktörler, mutfaklarda yer alan eylemler, eylem sırası, çalışma bölgeleri ve bütçe oldukları görülmüştür.

Kullanıcı gereksinmeleri; mekanı kullanacak olan insanın çevreden beklentilerini tariflemektedir. Bu gereksinmeler fiziksel ve psiko-sosyal olmak üzere iki gruba ayrılmaktadır. Fiziksel kullanıcı gereksinmeleri; mekansal, ısısal, işitsel, görsel, sağlık ve emniyet gereksinmeleri şeklinde sınıflandırılmaktadır. Psiko-sosyal kullanıcı gereksinmeleri ise mahremiyet, davranışsal, estetik ve toplumsal gereksinmeler şeklindedir.

Mekanın fiziksel özellikleri; mekanın toplam alanı, mekana ait yatay ve düşeydeki ölçüler, mekanın diğer mekanlarla ve dışarıyla olan ilişkisi, tesisat durumu, mekandaki standart dışı durumlar ve yapısal değişiklik gerektiren durumlar şeklinde sınıflandırılmaktadır. Mekansal gereksinmelerin bir alt sistemi olan ekipmana ilişkin faktörler ise; ekipman boyutları ve çeşitleri, ekipman düzeni, enerji kullanımı, ekipman-insan ilişkileri şeklindedir.

Mutfaklarda yer alan eylemler, eylem sırası ve çalışma bölgeleri; bu mekana ait her bir eylemin tek tek alt eylemlere ayrılmasını ve tüm alt eylemlerin gerekliliklerinin tariflenmesini içermektedir.

Bütçe ise mutfak plan tipinin belirlenmesinde etkili olan ve tasarıma başlamadan önce netleştirilmesi gereken bir diğer önemli faktördür. Çünkü proje ne kadar doğru tasarlanmış olursa olsun bütçeyi aşmışsa kağıt üstünde kalmaktan daha öteye gidemeyecektir.

Mutfak plan tipinin belirlenmesinde etkili olan tüm bu faktörlere ait tasarımcıya yardımcı olacak bilimsel verilerin oluşturulması ve bu bağlamda mutfak tasarım performansının artırılması oldukça kapsamlı ve uzun nefesli bir çalışmayı gerektirmektedir. Bu nedenle çalışma sadece mutfak mekanının fiziksel özelliklerinin bir alt bileşeni olan ve *mutfak plan tipinin* belirlenmesinde etkili olan *mekanın toplam alanı* faktörüyle sınırlı tutulmuştur.

Tüm bu değerlendirmelere bağlı olarak çalışmanın kapsam ve amacı; *mutfak plan tipi* ile *mekanın toplam alanı* arasındaki ilişkiyi matematiksel olarak tarifleyen istatistiksel verilerin elde edilmesi ve bu verilere ait sonuçların mutfak plan tipinin belirlemesi aşamasında tasarımcının doğru karar vermesine yardımcı olacak bir veri analiz tablosu halinde sunulması olarak tanımlanmıştır.

Tanımlanan bu kapsam ve amaç doğrultusunda çalışmanın metodolojisi olarak ilk aşamada tüm mutfak plan tiplerinin neler olduklarının belirlenmesine yönelik literatür araştırması yapılmıştır. Yapılan bu araştırma sonucunda mutfak plan tiplerinin; tek duvar tipi, koridor tipi, L tipi, U tipi, yarımada tipi ve ada tipi oldukları görülmüştür. Daha sonra bu mutfak plan tipleri esas alınarak Türkiye' nin farklı şehirlerinde bayilikleri olan bir firmadan temin edilen 1.309 adet gerçek mutfak projesi incelenmiş ve her bir projenin mekan toplam alanı ve mutfak plan tipine ait istatistiksel veriler elde edilmiştir. Çalışmanın en son aşamasında ise bu istatistiksel veriler arasındaki matematiksel ilişkiler tariflenerek tasarımcının mutfak plan tipini belirlemesine yardımcı olacak bir veri analiz tablosu oluşturulmuştur.

Yapılan bu çalışmayla, mutfakla ilgili çok kısıtlı bilginin olduğu ve daha hiç bir proje çalışmasının yapılmadığı ön hazırlık aşamasında, tasarımcı mutfak plan tipi ile mekan toplam alanı arasındaki matematiksel ilişkinin ne şekilde olduğunu istatistiksel sonuçlar üzerinden görebilecektir. Bu ise mutfak tasarımında en önemli aşamalardan biri olan plan tipinin belirlenmesinde tasarımcıya yardımcı olacak ve bu konuda daha doğru bir karar vermesini sağlayacaktır. Doğru belirlenmiş mutfak plan tipi ise tasarım performansı daha yüksek bir mutfak projesinin gerçekleştirilmesini mümkün kılacaktır.