

**T.C.
BAHÇEŞEHİR ÜNİVERSİTESİ**

**FACTORS AFFECTING JOB SATISFACTION
LEVELS OF CROWDSOURCED COURIERS**

Master Thesis

KHALED IBRAHIM

ISTANBUL,2021

T.C
BAHÇEŞEHİR UNIVERSITY

GRADUATE SCHOOL
INDUSTRIAL ENGINEERING MASTER

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Supervisor: Prof. Dr. AHMET BEŞKESE

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Khaled İBRAHİM

ABSTARCT

Factors Affecting Job Satisfaction Levels of Crowdsourced Couriers

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The goal of this research is to learn more about the elements that influence the overall satisfaction of crowdsourced couriers in Istanbul, Turkey. The research also looked at how job satisfaction differed depending on the courier's demographics. This research was conducted as the companies relying on the crowd in the shared economy was growing rapidly in the few past years and there was no research or any papers talking about the job satisfaction of these crowdsourced couriers. The necessary job satisfaction theories and factors affecting it were discussed in the literature part. 112 crowdsourced couriers participated by filling the Job Satisfaction Survey in the Istanbul. The findings showed that the couriers are fairly satisfied but there are main factors that can be improved which will increase their satisfaction. Furthermore, the Pearson correlation test revealed the strength of the positive link between the nine subscales and overall job satisfaction. Moreover, ANOVA test was conducted, and it showed significant difference in Overall job satisfaction among old and experienced couriers than young less experienced couriers, while there was no difference in satisfaction among couriers with different level of education.

Keywords: Job Satisfaction, Crowdsourced Couriers, Shared Economy, Gig-Economy, Last-Mile Delivery.

ÖZET

Kitle Kaynaklı Kuryelerin İş Doyum Düzeylerini Etkileyen Faktörler

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Bu çalışmanın amacı, İstanbul, Türkiye'deki kitle kaynaklı kuryelerin iş tatminini etkileyen faktörleri incelemektir. Çalışma ayrıca kuryenin farklı demografik değişkenlerine dayalı olarak iş tatmin oranlarında herhangi bir farklılık olup olmadığını test etmeye odaklanmıştır. Bu araştırma, paylaşılan ekonomide kalabalığa güvenen şirketlerin geçtiğimiz birkaç yıl içinde hızla büyüdüğü ve bu kitle kaynaklı kuryelerin iş tatmini hakkında herhangi bir araştırma veya makale bulunmadığı için yapıldı. Gerekli iş tatmini teorileri ve etkileyen faktörler literatür bölümünde tartışılmıştır. İstanbul'da 112 kitle kaynaklı kurye İş Memnuniyeti Anketi'ni doldurarak katılmıştır. Bulgular, kuryelerin oldukça memnun olduğunu, ancak memnuniyetlerini artıracak iyileştirilebilecek temel faktörler olduğunu gösterdi. Ayrıca Pearson'ın korelasyon testi, dokuz alt ölçek ile genel İş tatmini arasındaki pozitif korelasyonun gücünü gösterdi. Ayrıca, ANOVA testi yapıldı ve yaşlı ve deneyimli kuryeler arasında, daha az deneyimli genç kuryelere göre genel iş tatmininde önemli bir fark gösterirken, farklı eğitim düzeyine sahip kuryeler arasında memnuniyette bir fark yoktu.

Anahtar Kelimeler: İş memnuniyeti, Kitle Kaynaklı Kuryeler, Paylaşılan Ekonomi, gig-ekonomi, Son Mil Teslimatı.

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ABBREVIATIONS

CFA : Confirmatory Factor Analysis

JSS : Job Satisfaction Survey



1. INTRODUCTION

1.1 RESEARCH MOTIVATION

The e-commerce retailers offering customers virtual markets to buy goods online have witnessed significant development in the previous years due to the fast-paced lifestyles that we are living right now, where you have no time to go and waste it in the stores. These developments were accompanied with customers demanding faster (e.g., same day delivery) and cheaper deliveries. On the other hand, challenges and opportunities were unfolded for the retailers/Third Party Logistics (3PL) on how to apply efficient operations in the on-demand last-mile delivery, especially during peak demand. The most difficult component of the distribution process is last-mile delivery, which is the final step/leg of the online shopping experience (Esper et al. 2003). In this frame, delivery companies started working more on balancing the operations efficiency and customer satisfaction by developing creative solutions (Savelsbergh and Van Woensel 2016).

One of the solutions that was taken into consideration was the crowdsourcing of last-mile deliveries. Crowdsourcing is defined as delegating work to a broad group of people through an open call made feasible by technological advancements.

Due to the considerable growth of fast and reliable internet, new online payment methods, and new cloud-based technologies, crowdsourcing as a working paradigm has expanded widely. Also, the demand for flexible working patterns rather than the normal working patterns encouraged more growth in the Crowdsourcing concept.

Crowdsourcing last-mile deliveries makes it easier to reach independent couriers/drivers to cover the demand uncertainty during the peak demands without major capital investment (Joeress et al. 2016).

To have successful crowdsourcing session there should be an understanding of the crowd's needs to attract them to engage/participate in a specific activity, the needs differs in type based on the nature of task. Present theories explaining how the firm performance varies are all at the firm level or network level. This makes it not possible to use these out-of-scope theories to clarify the performance alteration of the crowd in crowdsourcing since the crowd does not have a formal organizational structure (Forsyth 2009; Reicher 2008). Furthermore, since the crowd's performance varies even when companies are providing the same incentives for doing the same tasks (Tang et al. 2011), knowledge from studies regarding crowd motivation (Ryan & Deci 2000) in a specific context cannot be used as a standard reference for firms working in a different context/specialization to improve the performance of their crowd. Moreover, the various crowd motivations in different context were not studied sufficiently even though crowd motivation's value was well understood while planning crowd-sourced activities (Hossain et al. 2015).

The activity of participating in crowdsourcing was analyzed in terms needs that lead to intrinsic and extrinsic satisfaction, including curiosity and pleasure, learning, motivation to solve problems, financial benefit, entrepreneurship, sense of success, altruism, appreciation and the opportunity to demonstrate skills (Howe 2008; Afuah and Tucci 2012; Ashurst et al. 2012; Füller et al. 2012; Battistella and Nonino 2013). These motivations can be studied more to develop a better way of employing the crowdsourced couriers.

The delivery companies using the crowdsourcing business model are exposed to huge loses if they can't meet the crowds' (couriers) expectation, due to unwillingness of participation. Therefore, conducting a study to measure the job satisfaction of the current crowdsourced drivers will help in in understanding there needs to meet their expectations. Also, up to my knowledge and up to date of writing this thesis, all the studies and papers published regarding the satisfaction of the crowd none of them were in the context of the crowdsourced couriers. Therefore, it will be helpful to explore the needs and their effectiveness on the crowdsourced courier to improve his satisfaction and increase his participation effort to develop a more consistent service.

1.2 RESEARCH QUESTIONS AND PURPOSE

Analyzing the behavior of the crowdsourced couriers in participating in the delivery operation is important for understanding how and why they choose a specific delivery company/platform to work with? This will help executives and managers to develop a basic guide when designing the incentives for the courier which will result in more nuanced and more effective supply management strategies. Which will help in developing a more sophisticated and successful courier supply management.

On this basis, this research was conducted to study the couriers' behavior, conduct interviews with experts/delivery companies, analyze the results to find answers for the questions below:

- a. RQ1: What are the factors affecting job satisfaction of crowdsourced couriers?
- b. RQ2: How do crowdsourced couriers differ in levels of job satisfaction based on their biographical variables?
- c. RQ3: How is the overall job satisfaction rate of crowdsourced couriers in Istanbul?

1.3 THESIS STRUCTURE

The purpose of this thesis is to answer the research questions therefore it will continue as follows: first, a theoretical background of the problem will be reviewed. Then the main theories will be discussed in chapter two. Followed by a detailed description of the research methodology, data collection instruments and the statistical methods use. After that the findings will be discussed in chapter four. Finally, the discussion and conclusion of the findings which concludes the remarks of the whole research will be in chapter 5.

2. LITERATURE REVIEW

2.1 SHARING ECONOMY OVERVIEW

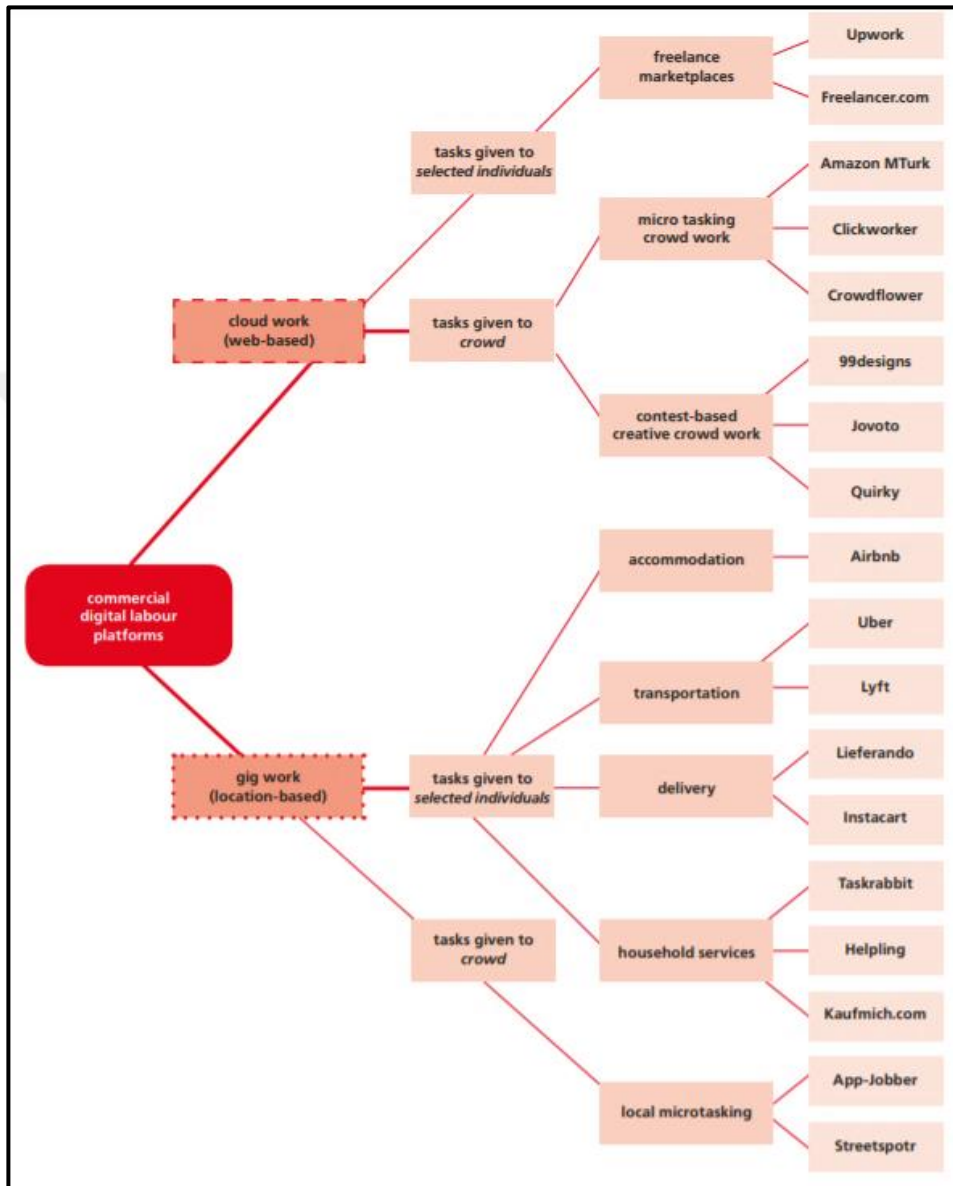
In the past few years, the shared economy term started to go viral among the world and it helped a lot of people to find work opportunities. The solution came in the form of marketplace websites and specialized companies together in the sharing economy. In these websites of the marketplace, businesses can rate the quality of the work they receive from workers and better monitor their costs. Also, this gave the chance for workers to reach many more companies than they could on their own and choose freely among them. The ‘sharing economy’, is expected by 2025 to be having a projected growth of approximately \$2.7 trillion. (Mukhopadhyay 2020).

Also, the idea of choosing when to work, deciding whom to work for and what to work on attracted more and more workers to the shared economy along the years. On the other side, businesses want protection, efficiency, and a competent work ethics.

Under the umbrella of the sharing economy there are 2 main forms of digital labour platforms, platforms that are web-based (cloud work) that does not require to be present geographically and location-based (gig work) platforms that can't function without the geographical presence of the worker.

Below in Figure 2.1 demonstrates the difference between the two forms of commercial digital labour platforms and various examples from each form:

Figure 6.1: Types of Digital Labour platforms



Source: (Schmidt C 2017)

The capacity of shared economy business models to provide many users with temporary asset ownership is such a fantastic breakthrough that benefits at a lower cost. Uber & Lyft business models are an example of companies in the sharing economy that offer ridesharing by using a smartphone application to link independent automobile owners and passengers for certain commission. Space sharing is another example of a service provided by Airbnb within the

shared economy, Airbnb connects house owners and guests through a mobile or web application for a certain commission. The examples of companies providing services within the sharing economy are tremendous and with a lot of variety. However, the scope of this thesis will be focusing on gig work (Location-based) form delivery companies in the sharing economy, companies like; Banbi Kurye in Turkey.

All these companies in the sharing economy provide their services by crowdsourcing the work to gig workers therefore the previously mentioned companies would not be able to achieve this huge success and scale up in very short time without leveraging the “gig workers”. The crowd sourced gig workers are the backbone of this economy and managing them properly is a critical issue.

2.2 CROWDSOURCING LAST-MILE DELIVERY OVERVIEW

“A web or mobile courier service that utilizes large number of geographically separated people to digitally align demand with supply” this was the definition of crowdsourced delivery by (Lam and Li 2015).

When comparing crowdsourcing to the traditional labor market, consumers represent labor demand (employers), employees represent labor supply, and the site represents the labor market middleman.

The growing demand from the consumers towards the faster online delivery can be covered by the crowdsourcing delivery model. Especially the younger generation who witnessed the fast development of the digital era, building high expectations for a faster delivery in the on-demand economy. According to (A.T. Kearney 2003) ; In the next decade, the younger generation customers will account for the majority of the shoppers.

Individuals offering their time and vehicle to perform deliveries help both retailers and their customers, crowdsourced delivery is advantageous, with the main benefit simply being that businesses can get their customers online orders quicker, often in less than an hour and handle demand fluctuations. Deliv, Instacart and Postmates are all examples of crowdsourced

delivery startups that collected billions of investments. The Delivery operation is slightly different in each of these companies but usually it goes as following:

- a. The customer places an order through the app, either one of nearest couriers bid to accept this order or it is allocated automatically to an available courier based on his proximity to the location of the pickup.
- b. The order is packed and picked, then delivered to the customer by the assigned courier.
- c. The courier receives his compensation from the delivery company after the delivery is confirmed by the customer or courier.
- d. The customer rates the courier usually or both rate each other.

2.3 ADVANTAGES OF CROWDSOURCING LAST-MILE DELIVERY

Crowdsourcing the delivery make companies able to satisfy the demands of their customers for immediate gratification with the option of on-demand or scheduled delivery. Also, there are other advantages that are beneficial for a company using crowdsourced delivery model:

- a. The main advantage about crowdsourced delivery; is providing greater flexibility with less capital investment than traditional outsourcing approaches. In other words, it is asset-light and tech-heavy. Couriers are only paid per delivery or shift however they provide their own transportation from the store location of a retailer to the delivery destination. This eliminates the complex logistics and associated costs of warehouse operations, fleet management, or employee benefits, during the on-demand delivery process.
- b. The ability to deliver the package while ensuring someone is home and eliminating the multiple delivery attempts that cost time and money.
- c. The customer feels more control over the shopping process since it provides for him speed and visibility. Customers can choose the exact time to receive their order and they can even track the courier through the GPS on their smartphone.

2.4 CHALLENGES OF CROWDSOURCING LAST-MILE DELIVERY

Crowdsourced delivery has great advantages but like all good things, is not without its drawbacks. Therefore, this section will discuss some of the general challenges faced by the companies using the crowdsourced based delivery model.

- a. First Challenge is the reliability of the delivery service, in other words providing the delivery service fully by crowdsourced couriers who manage their own schedules is considered as instable in terms of covering all the customer demand on time.
- b. Second Challenge is the quality of the service, as the whole crowdsourced delivery concept is based on employing low-cost nonprofessional individuals which can cause low-quality service and it can damage the brand reputation.
- c. Third challenge comes up when some customers consider sharing their location (address) with crowdsourced couriers (strangers) publicly as violation of their privacy.
- d. Fourth Challenge is only in the countries where the crowdsourced working model (Gig Economy) is not legalized, which extremely violates the rights of the workers as they don't have insurance.

In the next sections, the factors affecting job satisfaction along with the major job satisfaction theories will be discussed to develop a better understanding in choosing the right methodology for this research.

2.5 INTRODUCTION TO JOB SATISFACTION

In the twenty-first century job satisfaction criteria became critical in the workplace as employees have become more informed through education about their rights, and a workforce that is satisfied and motivated will certainly help maintain high efficiency and productivity.

Job Satisfaction

Satisfaction is a psychological factor that can be understood only in the human mind and cannot be quantified. In literature, varied meanings were given for job satisfaction. However, they mostly agreed that: it is how an individual reacts to factors related to his or her job while comparing the actual outcomes with his expected outcomes (Cranny, Smith and Stone 1992).

There is a variation in the satisfaction level of an employee according to specific aspects of the job (Cook et al 1981). Rewards, supervision, work's essence, working environment and self-variances are the basic dimensions that include the elements of Job satisfaction (Cook et al 1981).

utilize the motivation theories to have a guideline while designing their rewarding system that will keep employees motivated and satisfied.

2.6 THEORIES OF JOB SATISFACTION

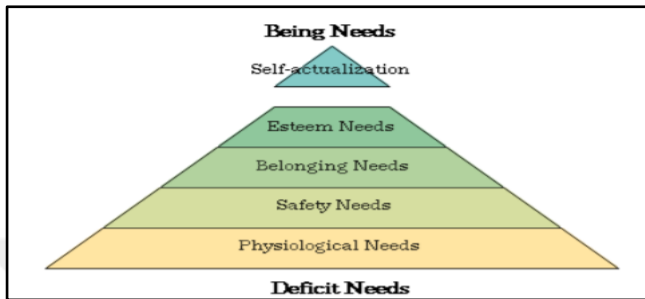
A higher pay, being promoted, having great social relations, or executing different type of tasks in work can lead to job satisfaction. All these needs can explain how these theories can be used to understand the reasons behind the variance in workers job satisfaction. However, the degree of satisfaction achieved by individuals primarily depends on their own expectations and desires, and the working environment. The Job satisfaction theories that will be discussed in this section will be sharing similar thoughts with process-based motivation theories.

2.6.1 Maslow's Hierarchy of Needs

This research used Maslow's theory as the first theoretical basis. (Maslow, 1954) has established the most common needs classification, his classification categorizes the people's needs into 5 categories. Also, he ordered the needs in a hierarchy, starting at the bottom with the basic psychological needs, then safety needs, social and esteem needs to the need for self-

fulfillment at the top. The lower need should be satisfied to be able to satisfy next the higher need.

Figure 6.2: Maslow's Hierarchy of needs



- a- Physiological needs: The need for food, water, sex, oxygen and clothing. The instinct of survival in humans relates with these needs to drive the motivation towards a certain behavior.
- b- Safety Needs: The need for protection from harm. Safety needs are the consecutive needs in the hierarchy after the physiological needs are satisfied wholly or partly.
- c- Belongingness and Love Needs: The need of fondness and belonging to a group. The individual moves to this deeper need related to emotional connections like family, friends and romantic relations, after satisfying his physiological and safety needs.
- d- Esteem Needs: This need is divided in two forms; First the desire of feeling confident and free in front of the world. Secondly the need of being respected and recognized by the society.
- e- Self-Actualization: This is the highest point (peak) in Maslow's hierarchy after satisfying all the previous needs, it refers to personal growth of the individual by accomplishing all the things that he can accomplish, to be the best version of himself.

The simplicity of the Maslow's hierarchy makes it easy for the public to relate with it, however it is a single way approach that requests the satisfaction of the basic needs to reach the higher needs without the consideration of differences among people regarding cultures

or work environments that may result in people having different priorities. Making this theory unrealistic in understanding the human behavior but rather to help in understanding the process of self-development or for coaching purposes.

2.6.2 Alderfer ERG Theory

Maslow's hierarchy of needs was used by the American psychologist Clayton Alderfer to develop his own (Existence, Relatedness and Growth needs) ERG theory (Alderfer, 1969). This theory re-divided the human core needs into three groups:

- a- Existence Needs: The need of physiological and materialistic well-being, like hunger, conditions of work and any type of existence needs.
- b- Relatedness Needs: The needs of being accepted and feeling related through interpersonal relations to engage with the human environment.
- c- Growth Needs: These are most critical needs, as it involves the individual to improve himself by picking the best ways to be what he is and to become he can be.

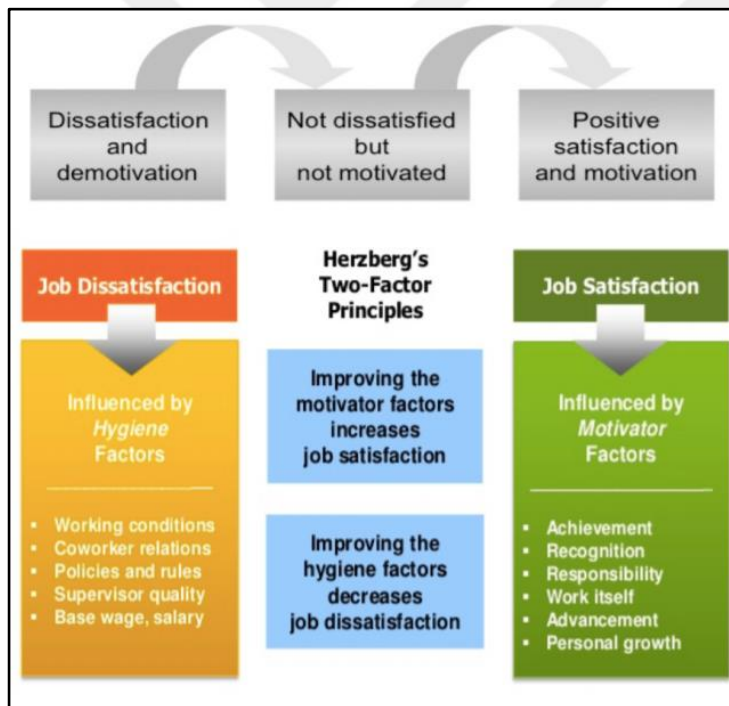
Unlike Maslow, the theory of ERG does not suppose that needs are connected to each other in a levelled hierarchy, and it states that any need(s) can be activated at any time. The idea of how the cultural differences affects our needs directly is supported by the ERG theory, since people at different points in their lives, they are driven by different needs. Also, one major principle mentioned by the ERG theory is the frustration-regression, which states that if a higher need cannot be satisfied, the individual may regress to a need that he can satisfy easier.

The Frustration-regression principle can have a direct impact on the workplace if the managers were not able to recognize that their workers are unable to satisfy their growth needs, making them to regress for lower existence needs like asking for higher salaries or socializing with their colleagues. Therefore, managers should identify their workers needs individually and assign the rewarding system based on that.

2.6.3 Herzberg's Two-Factor Theory

According to the two-factor hypothesis, human behavior is influenced by two sets of factors: satisfaction and dissatisfaction. (Herzberg et al 1957). This theory assumes that the presence of these factors in the workplace can trigger human motivation and job satisfaction, but their absence does not lead to dissatisfaction or motivation. Also, these states of satisfaction and dissatisfaction are directly influenced by two components: motivator factors and hygiene factors (Herzberg 1987). The motivator factors and hygiene factors and their influence on motivation and job satisfaction are demonstrated in figure 3 below:

Figure 6.3: The two-factor theory of motivation



Source: (Weiner 2012)

(Herzberg 1987) described the achievement, recognition, responsibility, growth, getting promoted and opportunity of advancement as intrinsic motivator factors that makes a person do a specific task for the sake of enjoyment without expecting any tangible thing but more of the emotional needs. The lack of the motivator variables will not decrease motivation, but its existence will increase motivation and satisfaction to lead to more commitment.

On the other side, (Herzberg 1987) defined the extrinsic hygiene factors to include: Personal or working relations, working conditions, Salary, personal life and job security, these factors are tangible and categorized as essential needs, that makes a person do a specific task for the sake of external rewards like money.

Managers focusing on satisfying the hygiene factors can lead the employees to strongly rely on the extrinsic rewards which influence the long-term plans of the organization and its success therefore building a work environment with tasks that are intrinsically motivated based, will influence the long-term success of the employees and their performance.

2.6.4 Acquired-Needs Theory

In 1961, David McClelland revealed in his book “The Achieving Society” about his acquired-needs theory. This theory stated that the individual’s previous experiences, form his needs that are acquired as time passes. According to McClelland theory there are 3 types of motivational needs:

- a- The need for achievement: it is the desire of objectives achievement especially the ones that are hard to achieve, to feel personal accomplishment. Individuals with the need for achievement do not seek easily doable tasks since the sense of achievement following the completion of these tasks does not feel genuine to them.
- b- The need for affiliation: it is defined as the need to conduct relationships with people and having the feeling of being accepted by them. Individuals with the need of affiliation tend to perform better in tasks that involve interaction with other people.
- c- The need for power: it is the need of influencing, controlling or having an impact on others. There two types of power needs:
 - c.1 Personal power need: which involves controlling others for the sake of controlling them.
 - c.2 Institutional power need: which involves the control of others and having more authority to make progress towards the goal of the organization.

A survey conducted in 2009 that included responses of 1047 executives, managers and employees, has supported McClelland's theory. The results of the survey stated that these workers are motivated more effectively by the intrinsic non-monetary triggers (leading a project, motivation from the responsible manager, management attention) rather than the Extrinsic monetary motivators (increase in salary, monthly bonuses and stock options) (Chandler 2009).

2.6.5 Goal Setting Theory

Locke and Latham developed the Goal Setting Theory that emphasises how job satisfaction and motivation are obtained from setting a goal. The Goal setting claims that when a person sets a Goal his attention & effort will be focused on it, while persistency increases (Kreitner & Kinicki 2008). When an individual is able to achieve his goal, his desires are satisfied. Thus, Persistence is an important element when trying to achieve a specific goal, since it represents the amount of effort exerted over a period of time to achieve that goal. However, good planning and execution along with a continuous monitoring of the progress is a main need for the Goal setting to yield positive results (Armstrong 1991). Therefore, rather than punishing a worker directly for not achieving the goals assigned to him, the manager should investigate the reasons behind not achieving (Luthans 1992).

2.6.6 Porter and Lawler Expectancy Model:

Porter and Lawler used the three basics factors of expectancy theory (Instrumentality, Valence & Expectancy) to develop a model that enhances and relates to perceptions of positions, reward for effort and satisfaction (PORTER at al. 1968).

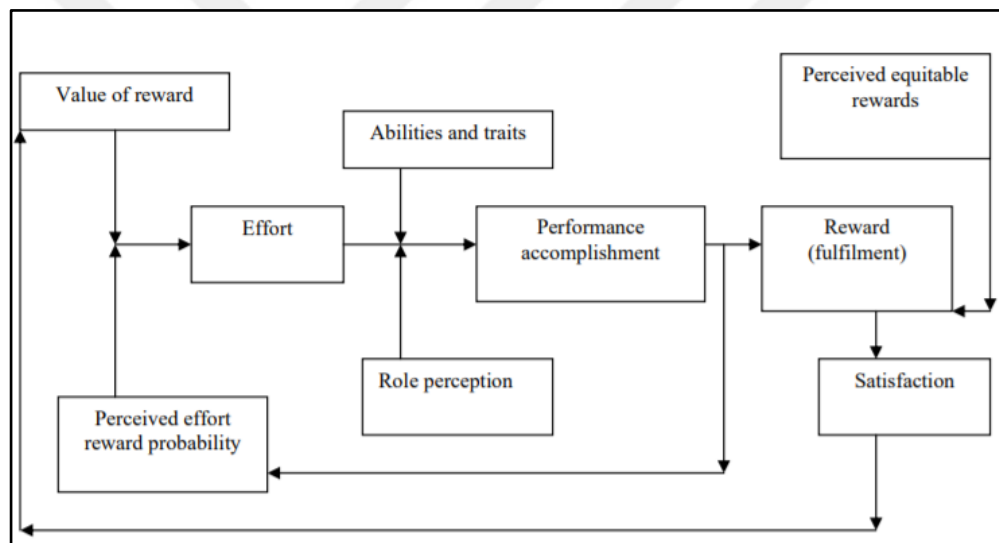
According to their model, the value and importance of a reward along with the understanding of the effort to do a specific task, determines the amount of effort that the individual will put into this task and his performance. In other words, for a specific level of performance to be achieved, the individual's efforts need to be based on understanding his deliverables while making sure that he has the necessary skills. Moreover, this model understands the variance

among people in terms of expected rewards, some individuals are seeking extrinsic rewards (extra pay or promotions) and others seek intrinsic rewards (feeling of achievement or being recognized). Also, the model states that after the individual exerts a specific effort done in a specific performance, this will directly determine the reward he will get.

If the reward that he got is equal to his expectations, it will increase his satisfaction otherwise a sense of dissatisfaction will emerge (PORTER at al. 1968).

The Figure below illustrates Porter and Lawler's model:

Figure 6.4: Porter and Lawler's model



Source: (Dipboye, Smith and Howel 2000)

2.6.7 Equity Theory

The equity theory that was developed and tested by J. Stacey Adams and the core of the theory is that workers compare their contributions and compensation in identical job conditions with those of others. The comparison of rewards (Output) that the worker does with his colleague's reward for doing the same job, can motivate him to take some action to reduce the difference in rewards.

Also, there are two types of equity: Procedural equity, which concerns workers' views of the fairness in which processes are operated in fields such as performance assessment, promotion and discipline, and in contrast to others, distributive justice is concerned with the fairness with which individuals think they are paid in line with their commitment (Adams 1965).

Employees state that input and outputs from their job is critical, as mentioned in the equity theory (Adams 1963). Furthermore, the theory defined the inputs by the worker as the number or value of his/her participations in work. While it defined the outputs for the workers as the quantity of rewards that he receives for his job. The inequity in the ratio of inputs to outputs can have some consequences on the worker's behaviour, such altering his effort to improve or reduce his performance. If the worker did not feel improvement in terms of equity after altering his efforts, he may start revaluating his outputs and inputs ratio with a different referent instead of that colleague. Lastly, if the worker could not fix the feeling of inequity he may resign from his job.

2.7 RELATED PROCESS BASED MOTIVATION THEORIES

Motivation

The word motivate originates from the Latin word “movere” which means to move or push to satisfy a need (Butkus and Green 1999). One of the forces contributing to success is motivation. Every individual has his own way to get motivated, sometimes it is the money earned or even the fear of avoiding something. Intrinsic motivation and extrinsic motivation are the two forms of motivation. Intrinsic means internal, and mainly this type of motivation is linked to activities that we do because we enjoy doing it, not because we must do it. Personal accomplishment is an example of intrinsic motivation. While the extrinsic motivation is directly linked to external factors controlled by others, for example, the salary. The employee satisfaction, productivity and performance are directly affected by his motivation whether extrinsic or intrinsic (Bhattacharyya 2007). Motivation of the work force plays an important role for a company to keep ahead of the competition in the market (Dreher and Dougherty 2002). In order to analyse the variables that lead to employee motivation,

several theories have been proposed. For leaders and managers at all levels, having a good understanding of various theories of motivation is a great help to be able to increase the productivity of their workforce. The process-based theories address how the people are motivated. Moreover, the Process based explained how in self-directed human cognitive processes the individual behaviour is driven and sustained (Kini, R.B., & C.J. Hobson 2002). While also analysing the external factors that can affect the individual's motivation.

Listed below the major Process based motivation theories that will be discussed in this research:

Process Based Motivation Theories:

- a. Expectancy Theory
- b. Reinforcement Theory

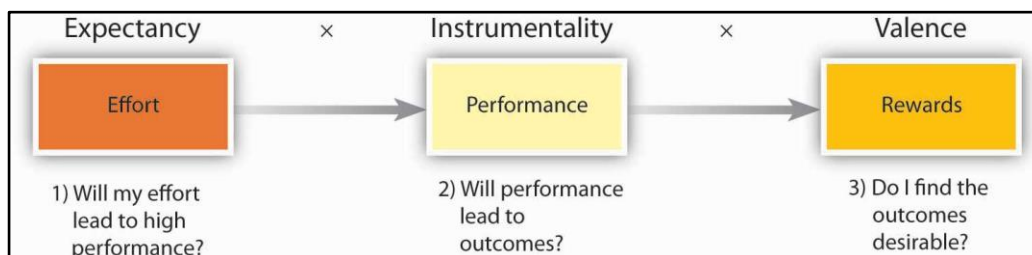
2.7.1 Expectancy Theory

The first process-based motivation theory used in this research was developed by Victor Vroom and named the Expectancy theory in 1964. It explains the worker's motivation to do a specific behavior is composed of three main factors:

- a. Valency
- b. Instrumentality
- c. Expectancy

The figure below illustrates the 3 main factors of the Expectancy theory:

Figure 6.5: Expectancy theory



Source: (Kini, R.B., & C.J. Hobson 2002)

Valency was described as the strength of preferring a certain outcome, also the valence of an outcome can be positive, negative or zero. For example, the valence of outcome is positive if the worker attains his preference of getting a monthly bonus over being transferred to another department, and the valence of outcome is negative if he is not attaining that bonus, but when it's not a difference for him whether to attain it or not then the valence of outcome is zero in this case. The second factor Instrumentality was defined as the understanding of the worker that his performance will lead to a specific result, this result can be a reward or a punishment. Therefore, the worker will improve his performance to get the reward that he believes that his effort will lead to it. The Third factor is Expectancy which states the belief that the worker's behavior will result in a specific output. Also, it can be defined as the process of choosing the behavior or quantity of effort that the worker expects it will lead to his desired outcome (Vroom 1964).

Overall Vroom thinks that for an employee to be motivated, he should be working toward a goal that is worthy for him, while having an environment that appreciates achievers. Thus, having the balance of all these three factors will make sure that the worker is motivated.

2.7.2 Reinforcement Theory

The second process-based motivation theory in this study will be the Reinforcement theory, which does not focus on the worker's desires or behavior but rather on the work environment around him (Skinner 1974). The theory reflects the idea that the reaction of a person to events or triggers and the effects that follow (rewards or punishments), will lead to a behavioral change (Moorhead & Griffin 2004). Therefore, constant feedback (conditioning) for the worker after a certain behavior, can increase or decrease this behavior. According to (Skinner 1974) the Reinforcement theory has four approaches:

- a. **Positive Reinforcement:** It occurs when an employer, react favorably as a result of the employee's actions that affect the organization positively. Thanking an employee who is coming early to be prepared for an important project, is considered positive reinforcement.

- b. Negative Reinforcement: It can be used to encourage staff to act in a certain manner so that they do not have to suffer the detrimental effects of not doing so. Not allowing a late employee to get into the meeting is a negative reinforcement for the other employees to attend meetings on time.
- c. Punishment: This occurs when you exert a negative action as a consequence of a certain behavior to discourage it or minimize it. An employee getting a warning for submitting his work late is considered a punishment for him.
- d. Extinction: It is the absence of reward for doing a certain behavior that was reinforced previously, to put an end for this behavior. Not giving extra work for the employees that will require them to work extra hours to earn more, is an example of the desire of extinction of extra hours as the company's is not doing well.

Managers can work on restructuring the habits or behaviors in their companies by applying these reinforcement approaches.

2.8 FACTORS INFLUENCING JOB SATISFACTION

Employment satisfaction can be illustrated, in basic words, what makes people happy with their jobs that will keep their desire of committing with this company and not leaving to work somewhere else. However, in research related to job satisfaction, it was described as a multidimensional complicated concept because an employee can be satisfied by some factors affecting job satisfaction but not all of them (Mullins 2008). Therefore, other research was conducted to analyse these factors and categorize them based on their nature. Most of the research in this major emphasised that extrinsic (environmental) and intrinsic (personal) factors have the influence on Job satisfaction (Spector 1997). Further illustration of the factors under the extrinsic and intrinsic categories will be discussed in the upcoming section.

2.8.1 Extrinsic and Intrinsic Job Satisfaction Factors

Extrinsic Factors

Factors affecting job satisfaction of the worker that are in his environment which he has no control over it, are defined as extrinsic factors (Atchison 1999). Extrinsic (Environmental) factors include financial compensation out of doing the job, supervision, job itself, opportunities for personal growth, co-workers and promotion opportunities. Below is a further explanation of every extrinsic factor along with its effect on job satisfaction:

- a. Financial Compensation: is the amount of pay that the worker receives for doing a certain job and it is the aim main for workers to seek a job. However, there is a complicated relation between job satisfaction and financial compensation according to (Atchison 1999), an increase in financial compensation has short-term effect on job satisfaction. The equity theory stated that workers are more satisfied when there is equity in financial compensation with their colleagues doing the same tasks (Adams 1963). Therefore, beside financial compensation managers need to cover other factors affecting job satisfaction to keep their employees cheered up and motivated.
- b. Supervision and management: The way a supervisor deals with his workers reflects the mentality and strategy of an organization, and according to (Ranganayakulu 2005) supportive supervisors in different contexts were resulting in satisfied workers about their jobs. The real success of the relationship between a supervisor and the worker is based on the way of communication, if the right way of communication was chosen it will affect the workers' attitudes toward their job significantly. Therefore, poor communication with workers can affect their satisfaction about work negatively. Overall, good relations with supervisors and being satisfied about their performance will make workers to be more committed to the company and that will lower the turnover rate (Bishop et al. 2000).
- c. Job itself: This factor can be defined as the nature of the tasks in a specific job that can determine the degree in which the worker is able to improve himself and be

confident to handle more responsibilities to achieve tangible results (Robbins et al. 2003). Therefore, the task must be designed in an interesting and self-challenging way so that it will keep the worker motivated and satisfied about his job (Pearson 1991). On the other side, there are some employees who prefer the easier jobs free of challenging mental effort (Johns 1996). Thus, matching the right worker with an interesting task is an important issue that managers should keep in mind to make sure workers are satisfied and they will perform better.

- d. Co-workers: Workers spend majority of their time with their colleagues at work, so if they have good relations and they support each other it will result in a healthy work environment. Thus, Co-workers were found to be more satisfied about their jobs if they have good relationships with their colleagues (Yang, et al. 2011). Also, building a work environment in which workers with more seniority are working hard and appreciate their work can lead recently employed workers to act similarly (Salancik & Pfeffer 1997). On contrary to the mentioned above, there are some opinions stating that the presence of good interrelationships between employees is not a must for job satisfaction but damaged relations between employees can cause workers to be unsatisfied about their work (Luthans 1992). Hence, continuous observation of the relations between co-workers and keeping positive bonds between each other is important to keep lower negativity in the work environment.
- e. Promotion Opportunities: Getting promoted is one of the main reasons employees try to put outstanding effort in their jobs, and other than the increment in his Salary, it also serves as a personal achievement for him (Ranganayakulu 2005). The transparent and fair promotion policy within a company can influence the workers satisfaction about their jobs and can affect their attitudes (Friday and Friday 2003). However, even if the company has a fair promotion policy that is based on equity among the employees, not all of the employees will be satisfied about their job because simply not all the employees want to be promoted, which highlights the idea of having equal chances of promotion is not the only factor affecting Job satisfaction positively. Thus, Managers need to take into consideration the workers personal career ambition towards being promoted.

Intrinsic Factors

The Intrinsic sources of job satisfaction last longer than the extrinsic sourced and comes basically from the worker personally (internally) and not from his work environment (Atchison 1999). Therefore, in this section the effect on job satisfaction from intrinsic factors like person-job fit, personality and demographic variables including age and educational level will be discussed.

- a. Person-Job Fit: The harmonization between the person and his job up to a certain level, is an important issue that can determine his degree of satisfaction towards this job. Thus, analyzing the characteristics of a job without considering the characteristics of the worker will not lead to job satisfaction but rather matching the job with the right person will generate job satisfaction (Spector 2003). For example, a worker with great social skills and wishes to find a job that requires interaction with other people, will not be satisfied with a position limited to working in an office. Therefore, the right person should be matched with the right position to achieve high levels of job satisfaction in the work environment.
- b. Personality: The worker's personality and his general satisfaction about life can affect his way of viewing things, no matter how things in their work environment are great or bad it does not affect their satisfaction about their work. This was assured in Hawthorne studies, where some of the workers where always complaining no matter what the researchers did for them (Spector 2003). Therefore, manager must accept the fact that there are some people will never be satisfied about their jobs whether the work environment is changed or even if they changed the whole job. Trying to observe the worker's view and general satisfaction of life during the recruiting process will help apparently build a work environment with higher job satisfaction rates (Aamodt 2004).
- c. Years of experience: Experienced workers in a particular job are happier in their jobs than those with less years, according to (Oshagbemi 2000). Although, there are other

studies that came up with an opposite conclusion such as the one conducted by (Lambert et al. 2001). Therefore, it may be related to the organisation and how they deal with their seniors either they appreciate them or not, which affects their job satisfaction rate.

- d. Age: In the literature, the effect of age on job satisfaction is surrounded by unequal opinions about the effect of age on job satisfaction, however mostly they agree that a positive correlation between them exists. One of the reasons discussed was that the younger generations are mostly unable to perform in both work and their social life duties, which can act as source of job dissatisfaction (Hunter 2007). There are also other opinions that links the older ages with higher job satisfaction since older employees got used to their job over time, on the other side, a younger employee has high expectations from his job that if he did not receive, it will lead him to be dissatisfied about his job (Okpara 2004).
- e. Educational Level: Choosing the worker that has a suitable educational level to fulfil the job's needs is important, choosing a worker with high educational level to do a job that requires doing repetitive tasks may lead to job dissatisfaction (Green 2000). Raising up the concern of matching the person with the needed level of education according to the job requirements and not hiring highly educated people in positions where they over qualify, this balance will lead to better job satisfaction since the expectations of highly educated people are higher.

2.9 CONSEQUENCES OF HAVING A DISSATISFIED OR DEMOTIVATED WORKER

In the previous section, different factors affecting satisfaction directly were discussed. However, understanding the effects on the organization when having demotivated workers with low satisfaction rates about their jobs is important for the management to make the right decisions. Turnover and performance are 2 of the main implications that are directly linked with demotivation and dissatisfaction of workers. Moreover, if the turnover rate rises due to

demotivation it may lead the workers to be uninterested in their work, which will affect their performance negatively. Especially in the context of crowdsourcing delivery, setting up a network of couriers with low turnover rate and high eagerness to participate is extremely important for the success of the delivery platform.

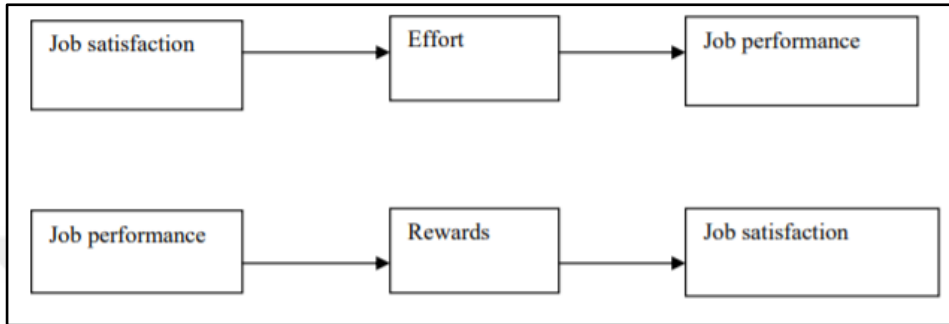
- a. Turnover: The rate at which employees join and leave an organization is known as the turnover rate. This high turnover rate is costly for an organization and it can kill its continuity, therefore avoiding a high turnover will result in avoiding the costs related to replacement and training of new employees. Generally, studies have proved that most of the employees leaving their jobs were the ones with low job satisfaction rate (Spector 2003). Moreover, the job satisfaction level of the workers will determine the ability of the organization to keep these employees longer (Mbah and Ikemefuna 2012). Since there is already high turnover rate within crowdsourcing environments, it makes it critical to keep the motivation and the satisfaction of the employees in high levels to avoid losing the employees.
- b. Performance: “The happy employee is a productive employee” is a statement stated by many authors. Also, it was proved that the success of any company and especially services companies, is directly depending on having satisfied employees. Moreover, customers will receive a better quality of service through these happy employees which will lead to more customer satisfaction. According to (Porter et al. 2003) the researchers identified theories that made common grounds between job satisfaction and performance through the hypothesis developed directly or indirectly.

A general conclusion that these theories gave:

- i. Improving the job satisfaction rate of the employees will increase his effort in work to result in a better performance, or
- ii. Assuming that workers who are performing well will get a reward (by being recognized or getting a higher pay or promotion) and job satisfaction will follow.

Below is a diagram with 2 models that illustrate both conclusions mentioned above:

Figure 6.6: Job satisfaction and Performance relation



Source: (Gibson, Ivancevich & Donnelly 1997)

Finally, the management in the crowdsourcing delivery service needs to keep an eye on the morale of their workers to be able to maintain the continuity of the organization with high productivity and to avoid high turnover rates.

2.10 CONCLUSION

In this chapter the shared economy concept was discussed to propose the crowdsourced delivery business model. Then the advantages and challenges of the crowdsourced based delivery model were discussed briefly, which showed that it is an effective model that can help a company expand its operations if it is managed properly in a way that will keep the couriers satisfied to participate.

The chapter proceeded through the literature to discuss several job satisfaction and motivation theories to create better understanding and to be able to identify measurable factors that can affect the courier's motivation and their job satisfaction rate. First, job satisfaction theories were discussed to be able understand the different approaches available to understand the courier's job satisfaction and manage it. Also, related process-based motivation theories were discussed while referring to the factors affecting it.

All of this led to the conclusion which shows how job satisfaction is influenced by several elements; some of these elements have a greater impact than others, but they are all classified as extrinsic (external) or intrinsic (internal) aspects.

Finally, the methodology used to investigate the research questions will be discussed in the next section.



3. METHODOLOGY

3.1 INTRODUCTION

In the previous chapter, mainly job satisfaction theories and factors affecting the employee's job satisfaction were discussed. Chapter 3 will contain, the research methodology, measuring instruments and sampling methods used to investigate the research problem.

The Aim of the study:

This study analyzed the crowdsourced courier's current work satisfaction and the elements that influence it, this will help in the process of improving their job satisfaction rate especially that there is no research that explains these factors, its impact on their performance and their willingness to keep working with a specific company longer (reducing turnover).

Problem Statement:

The delivery companies using the crowdsourcing business model are exposed to huge losses if they cannot meet the crowds' (couriers) expectation, due to unwillingness of participation or participating with other companies. Couriers not participating means that the company will be out of resources to cover the deliveries of their consumer's demand.

Research objectives:

The Research Objectives of the research are as follows:

- a. Finding out the factors affecting job satisfaction of crowdsourced couriers?
- b. Finding out how do crowdsourced couriers differ in levels of job satisfaction based on their biographical variables?
- c. Finding the overall job satisfaction rate of crowdsourced couriers in Istanbul?

Research Approach:

“The approach of solving the research problem systematically is the research methodology” (Kothari 1985). However, not only the application of research techniques is important, but relating it to the objectives of the analysis, purpose, indication, and the justification for a particular methodology are very important for researchers to know. Choosing the best methodology requires the researcher to know that every research problem needs a different approach while also understanding the theoretical background and variables of different approaches (Kothari 1985).

The research design directs the researcher to follow the right methodology, there are various research designs including: experimental, exploratory, descriptive, and confirmatory. Using two sets of variables, experimental research is carried out in a scientific manner. The first set serves as a constant against which the second set's changes are measured. Therefore, the researcher will be able to develop the relation of cause and effect between the variables. When doing a case study, the descriptive research design is frequently employed to explain the features of the population or phenomena being researched. Furthermore, if there is less research done on a specific topic to rely on, this topic can be researched using exploratory research design since it aims to get insights about the topic. The exploratory research design will help in generation of new ideas and development of new hypothesis (Creswell & Creswell 2017). Finally, the confirmatory research where hypotheses are concluded from one or several theories and are tested with the suitable statistical parameters. Therefore, as there are several theories (mentioned in chap:2) stating the main elements of motivation and employees work satisfaction, confirmatory research design was chosen to verify the hypotheses concluded out of these theories.

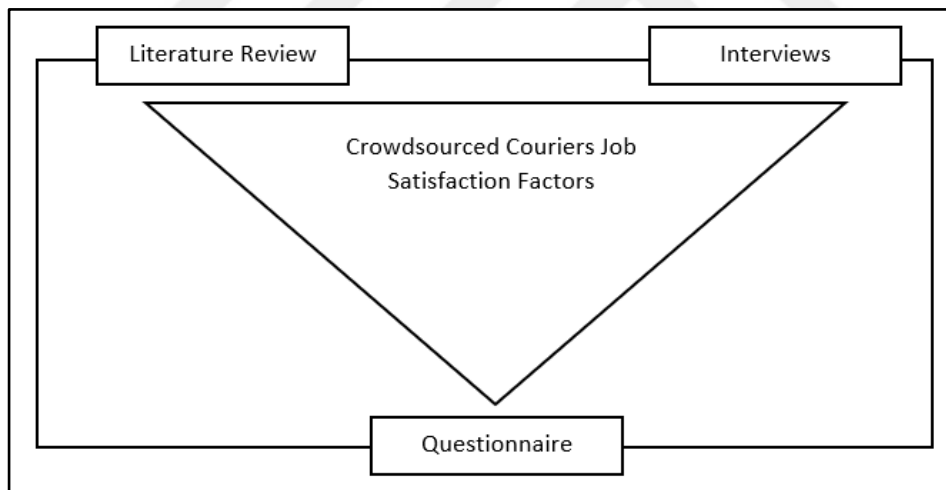
To fulfill the goals of this research, a mixed method approach was used, which includes qualitative interviews with experts and quantitative surveys answered by crowdsourced couriers. These interviews along with the literature review helped the researcher to derive hypotheses that were tested with statistical methods applied to the data gathered. Also, conducting these interviews before the quantitative method stage enhanced the understanding

of the underlying triggers of courier's satisfaction on a deeper level within the organization and how do the communication behaviors relate with their satisfaction and cheering them up.

3.2 DATA SOURCES

To increase the reliability and enhance the credibility of this research, data sources triangulation was done, in other words more than one data source was used. First, the related literature review was studied then non-structured interviews with experts were conducted to help in designing the questionnaire. This step helped to use the strengths and to weaken the limitations of both the quantitative and qualitative data sources.

Figure 7.1.Data Triangulation



Source: (White 2005)

3.2.1 Secondary Data

Literature review in chapter 2 helped in building a clear idea and understanding factors that affecting job satisfaction of workers and motivation leading to it. This review consisted mainly of the major job satisfaction theories and related process-based motivation theories. Understanding these theories helped the researcher to initially identify and understand the main factors affecting job satisfaction with respect to their type whether extrinsic or intrinsic.

3.2.2 Primary Data

Interviews

There is almost no researches or papers talking exactly about the factors affecting job satisfaction in the context of crowdsourced delivery, so having interviews with experts working and interacting directly with crowdsourced couriers will help to get more info from their experience to help in answering the research questions. These interviews will also make sure that almost the specific factors affecting the job satisfaction of crowdsourced couriers are included in the research.

Structured interviews, semi-structured interviews and unstructured interviews are the 3 types of interviews. According to (Bryman and Bell, 2007), unstructured and semi-structured interviews are more suitable as qualitative interviewing when there is an interest in the personal experience of the interviewee. Unstructured interviews were conducted for this research as it gave the chance for the interviewees to explain about their experiences without any limitations. 20-30 minutes recorded interviews were conducted with 7 Experts in different companies after the permission of the interviewees to be used later in the analysis. During the interview open end questions that were asked, include; what are the factors that can affect the job satisfaction of crowdsourced couriers? How can you keep a crowdsourced courier work longer for your company? Then prob questions were asked to elaborate more where further information would be needed. This helped in revealing more factors or practices that can affect Job satisfaction of the crowdsourced couriers. Finally, all the factors obtained from the interviews were combined with the factors found in the literature. These 11 Factors were gathered in Table 3.1

Table 7.1: Factors affecting Job satisfaction from Literature and interviews

Factors collected from the Literature review and Interviews	Source
Age of the courier	Literature Review
Years of service as a courier:	Literature Review and Interviews
Education level of the courier	Literature Review
The Amount of Payment received from the deliveries	Literature Review and Interviews
A Fair Performance based monetary rewarding system	Interviews
Supervision (Relation of supervisors and couriers)	Literature Review and Interviews
Recognition of high performance through gamification	Interviews
The Operating conditions of the company	Interviews
The crowd-sourced couriers relations	Literature Review and Interviews
Appreciating the Nature of work	Literature Review
Communication between operations management and the couriers	Interviews

Factors clarification

- a. Age of the courier: The age of the courier was one of the factors mentioned by the literature review and it's effect on job satisfaction rate directly. Furthermore, it was discussed that the younger generations are mostly unable to perform in both work and their social life duties, which can act as source of job dissatisfaction (Hunter 2007).
- b. Years of service as a courier: According to the experts and the literature review, the numbers of years of service as a courier can affect his job satisfaction rate. Moreover,

experienced courier is believed usually to have a higher job satisfaction rate than a courier with a lower experience.

- c. Education level of the courier: Since not all the crowd-sourced couriers are barely educated people and even some do deliveries as a part-time work beside their educated based jobs, it was related by the literature review.
- d. The Amount of Payment received from the deliveries: The amount of money received per delivery was listed by most of the experts as a high priority factor for the couriers to be satisfied and prefer working with a specific delivery company. Even in the literature review it was stated that financial compensation tends to have direct effect on Job satisfaction.
- e. A Fair Performance based monetary rewarding system: A fair system that compensates the courier based on his performance was described by the experts as a critical point that may influence the satisfaction of that courier and make him improve his performance even more.
- f. Supervision (Relation of supervisors and couriers): Keeping good relations with the couriers and treating them as partners not workers was the general idea discussed by the experts when describing a healthy relationship with the crowdsourced couriers. Moreover, it was listed in the literature review, that good relations with workers make them to be more committed to the company and that will lower the turnover rate.
- g. Recognition of high performance through gamification: Gamification was a term used by several experts to explain about systems they used to make couriers who outperform to feel they are recognizable within their colleagues and to be promoted for more deliveries.
- h. The Operating conditions of the company: The procedures conducted during the delivery operation differs from one company to another, like filling papers or forms on the app. According to the experts, a company with a straightforward procedure and without unnecessary routines are preferred by the couriers.
- i. The crowd-sourced couriers relations: Each company tries to keep good relations between its couriers through monthly events or developing an online community so that they can share knowledge and tips about performance improvement especially for the

beginners. It was mentioned by the experts and in the literature that good relations between workers can increase the job satisfaction rates and lower the turnover rate.

- j. Appreciating the Nature of work: Enjoying the type of work (delivery) and understanding its important role in saving people's time, is an important issue for the courier to appreciate his job and be satisfied, as mentioned in the literature.
- k. Communication between operations management and the couriers: If the way of communication is not clear to ensure that the courier gets his delivery task clearly or to be supported properly when something goes wrong during his delivery, it can be overwhelming for him as mentioned by the experts.

Identifying these factors helped in designing the right job measurement instrument (questionnaire). The next section contains further details about the questionnaire and the rationale behind choosing it.

Questionnaire

A quantitative part was added into this research by using a questionnaire to act as a primary data source instrument. There are several advantages when using the questionnaire as a measuring instrument:

- a. The questionnaire's structure makes the analysis of data a straightforward process that leads to an objective discussion of the statistical data (Cohen et al. 2011).
- b. The cost per questionnaire is relatively low (Denzin and Lincoln 2000).
- c. When the nature of the data collected is related to people's feelings, opinions or knowledge, the questionnaire would be the suitable tool (Rea & Parker 2005), similar to this research.

Questionnaire was measuring the factors affecting Job satisfaction of crowdsourced couriers. Generally, when it comes to measuring job satisfaction of workers there are several instruments, and each instrument has its own approach. Therefore, the major instruments

along with their pros and cons will be discussed below to choose the right one for this research.

Job satisfaction measurement instruments

There are several instruments to measure job satisfaction including questionnaires and interviews, in this research questionnaires were more convenient than interviews because the crowd sourced courier's nature of work keeps them always in a rush and their time is limited. The idea of having psychological effects, not only job characteristics as a main part of job satisfaction makes it complicated to be measured. For instance, two employees doing the same job in the same company can experience different job satisfaction levels due to their subjective evaluation of needs and expectancies.

Although there are different opinions between researchers about measuring job satisfaction, two main methods were previously mentioned to assess job satisfaction: 'facet approach' and 'global approach'. The global method takes into account both emotions and cognitions about the workplace, whereas the facet approach takes into account distinct elements of the employment, such as the work assignment, salary, promotion, supervision, or coworkers. (Judge et al. 2017).

The Global scales come in two types: multi-item or single item. The single scale assumes that job satisfaction is one-dimensional even though it seems multidimensional therefore it was questioned by some researchers (Green 2000). Moreover, Global instruments serve better when the goal is observing amendment in work satisfaction and not to identify the satisfaction and dissatisfaction areas (Van Saane 2003).

Global scales with multiple item scales major examples include 'The 18-item 'Job in General Scale (JIG)' and the 3-item 'Michigan Organizational Assessment Questionnaire Subscale' (Spector 1997).

Facet approach evaluates the job characteristics that create contentment or unhappiness. In comparison to the global approach, the facet approach can provide a more complete assessment about job satisfaction (Spector 1997). Also facet scales are categorized as single like the global scales. Nonetheless, the multiple items scales are considered more reliable because the respondents can make mistakes while filling the questionnaire single item which will affect its reliability negatively (Spector 1997). Furthermore, when the number of items in the subscale is considerable, as in the many items scale, the effect of inconsistent replies will be modest. The multiple item facet specific scales provide a more complete assessment of each facet. 'Minnesota Satisfaction Questionnaire (MSQ)' can be used as single or many items. This questionnaire has two versions: a lengthy version with 100 items (5 items each aspect) and a short version with only 5 items (single item per facet). Other facet specific scales include Smith et al's "Job .s Descriptive Index (JDI)" and Hackman and Oldman's "Job Diagnostic Survey (JDS)". The JDI scale also contains five aspects and 72 items, each of which conveys an evaluative adjective or short sentence. The JDS, on the other hand, contains subscales with 3 to 5 questions (total 16 items) that assess the influence of job characteristics such as work nature, motivation, personality, psychological states, and job response.

The JSS was developed within the same context, it has 9 facets with 4 items per facet (total 36 item), Pay, advancement, supervision, fringe benefits, contingent rewards, working environment, coworkers, type of job, and communication are all factors to consider.

According to the study conducted by (Van Saane 2003), the JSS is virtually the best in terms of validity and reliability of all the scales reviewed. Moreover, the facets in the JSS cover 9 out of 11 factors mentioned previously in the previous section, which supports validity and the reliability more.

Most importantly, since this research was done in Turkey, the translated version of the questionnaire used needs to be valid and reliable, which was assured by (Yelboğa 2009) that the JSS in Turkish is valid and reliable. Therefore, adding some questions to the JSS's items to cover all the 11 factors will still maintain a low number of total questions making it the best choice as a measuring instrument for this research since also the crowd sourced couriers have limited time and answering long questionnaires is not possible.

To Fulfill the goals of this research, the questionnaire contained 2 sections:

- a. Section 1: Biographical Questionnaire
- b. Section 2: Job satisfaction survey

In the upcoming sections there is a detailed explanation of the rationale behind choosing these two sections.

Section 1 : Biographical Questionnaire:

This part of the Questionnaire was added to get biographical info about the crowdsourced couriers such as:

- a. Age
- b. Education level
- c. Years of service

This will help in analysing the relation of job satisfaction with these factors that are included under the intrinsic factors and claims to be affecting the courier's job satisfaction rate according to the literature and interviews.

Section 2: Job satisfaction survey:

- a. The Rationale of using JSS

JSS being reliable and valid was the reason behind choosing it as the measuring scale for this research (Spector 1997). The JSS has several facets measuring different factors affecting job satisfaction. Moreover, it consists only of 36 items which makes it perfect for the current study as the crowdsourced couriers time is limited.

Structure of JSS (Job satisfaction Survey):

It is made up of 36 items each 4 items are measuring a specific facet, some of these items are written in negative words. Every item can be rated from 1 to 6 on the Likert scale, 1 represents strongest disagreement and 6 represents strongest agreement (1 to 5 in Turkish version). The scores of the facets are calculated by summing the 4 items score which can range from 4 to 24 (4 to 20 in Turkish version), while summing all the items (36) calculates the overall satisfaction. it can range from 36 to 216 (36 to 180 in Turkish version). The negative items need to be inverted before computing the scores.

Table 7.2: JSS items

Subscale	Item numbers
Pay	1, 10, 19, 28
Promotion	2, 11, 20, 33
Supervision	3, 12, 21, 30
Fringe Benefits	4, 13, 22, 29
Contingent rewards	5, 14, 23, 32
Operating conditions	6, 15, 24, 31
Co-workers	7, 16, 25, 34
Nature of work	8, 17, 27, 35
Communication	9, 18, 26, 36
Total satisfaction	1-36

Reliability of JSS

The JSS scale is reliable according to (Spector 1997) when he applied it on a sample 2870 public and private sector participants and it reported an overall Cronbach's alpha coefficient of 0.91. While the sub-scales reported Cronbach's alpha coefficients between 0.60 and 0.82.

Internal consistency and test-retest reliability are two forms of reliability estimates that are important to consider when evaluating a scale, according to (Spector 1997).

Validity of JSS (Job satisfaction Survey)

The validity of a scale determines its ability to measure and give trustable results and according to (Cresswell 2003), Validity may be tested in a variety of methods, including: The constructs of content validity and criterion-related validity.

Content validity

The content validity of a measuring instrument reflects the extent to which the items measure the content they were meant to assess (Cooper & Schindler 2003). Therefore, the questions must be covering all the factors or points that help in achieving the goals of the research. This proves that the JSS has content validity since it is measuring job satisfaction using several subscales.

Criterion –related validity

The capacity of a tool to predict a certain outcome through its assessment is referred to as criterion-related validity. while making sure that these results can correlate with results from similar tools (Cooper & Schindler 2003). According to (Spector 1997), subscales of the JSS correlate well with the JDI's comparable subscales. Correlations between employees and supervisors varied from.61 to.80.

Sampling Technique

Calculating the right sample size is an important issue for any research. A bigger sample can produce more accurate findings, but excessive answers can be costly, so selecting a small

sample that is representative of the community is crucial. Nonetheless, choosing the sample size is controlled by the nature of the research, for example in this research there was no information available from the public registries or the companies in Turkey or even Istanbul about the number of crowdsourced couriers. Also, all crowdsourced based delivery companies rejected several attempts of getting any data due to their strict policies. Moreover, there was no similar research found that can be used as a reference. Therefore, finding the population was hard and choosing the number of couriers needed for this research was calculated using a formula, that takes the Z-score of the Confidence Level, Standard of Deviation and Margin of Error. Further explanation of these terms is found below:

- a. Confidence level: It is the interval (percentage) containing all the possible samples that can be assumed to contain the true population parameter. Moreover, confidence level corresponds to a Z-score and the most common confidence levels:

90 percent – Z Score = 1.645

95 percent – Z Score = 1.96

99 percent – Z Score = 2.326

- b. Standard of Deviation: It represents the variance in the sample and usually it is safer to use 0.5 as it ensures that the sample will be large enough.
- c. Margin of error: Percentage of error outside the confidence level.

$$\text{Sample Size} = (Z\text{-score})^2 * \text{StdDev} * (1-\alpha) / (\text{margin of error})^2$$

In this research the confidence level was taken as 90% (Z Score = 1.645), Margin of error was taken as 0.08 and standard deviation was taken as 0.5.

$$\text{Necessary Sample Size} = (1.645)^2 * 0.5 * (1-0.5) / (0.08)^2 \approx 107$$

A sample size of 107 crowdsourced couriers were chosen in this research to represent the crowdsourced couriers in Istanbul.

3.3 RESULT ANALYSIS

After the surveys were distributed, the data was entered to the SPSS statistical software to conduct the needed statistical analysis. First, to explain the data quantitatively descriptive statistics were conducted. Then to check the normality of the data, Kolmogorov-Smirnov and a Shapiro-Wilk normality tests were conducted. Conducting the Cronbach's alpha reliability test helped in checking the reliability of the data. Pearson's correlational analysis was used to measure the correlation among and between the subscales and the overall job satisfaction. Nonetheless, ANOVA measured the difference of the overall job satisfaction based on the demographic variables. Finally, CFA was conducted to check fitness of the JSS scale on this data and the needed modifications were done to produce the final model.

4. FINDINGS

4.1 INTRODUCTION

This section will show the findings after the analysis of the collected data by the surveys. After the surveys were distributed on 112 Crowdsourced couriers in Istanbul, it was entered into the SPSS and double checked to avoid any data entry mistakes. All of the 112 were complete and usable since the researcher was re-checking the completeness of every survey on-site after it was filled. The surveys were entered to the SPSS statistical software for the analysis process. Then, the scores of negatively worded items in the survey were reversed. The first part includes a demographic characteristics analysis of the sample data based on the age, education level and years of experience. Next, descriptive statistics, normality tests, Pearson's correlational analysis ANOVA test and reliability test of the JSS scale was conducted. Finally, AMOS 26 software was used to conduct the confirmatory factor analysis.

4.2 DEMOGRAPHIC DATA ANALYSIS

Table 7.3: Sample distribution by Age

Age	Frequency		Percent
20-24	2		1.8
25-29	21		18.6
30-34	39		34.5
35-39	28		24.8
40-44	15		13.3
45-49	5		4.4
≥50	3		2.7

In the current study a sample of 112 crowdsourced couriers was acquired in Istanbul, of which mostly were young people with an age range from 30 to 34 years (34.5%, n=39). Then comes the second highest age range from 35-39 that almost made quarter of the whole sample

(24,8%, n=28). Almost one fifth of the whole sample are from 25 to 29 years of age (18,6%, n = 21). While the 15 couriers in the 40-44 age range made only 15% of the sample. Among these crowdsourced couriers ,only five people belong to the 40 to 49 years old group, three to the greater than 50 years old group and two are from 20 to 24 years old (13.3 %, 2.7%, and 1.8%). see Table 3.3

Table 7.4: Sample distribution by Education Level

Education	Frequency		Percent
High school	38		33.6
Associate Degree	61		54.0
Undergraduate	14		12.4

The 112 crowdsourced couriers who participated in this study mostly studied up to the associate degree education level (54%, n = 61), and one third of the whole sample studied up to the high school (33.6%, n = 38). The rest of the sample were graduated with undergraduate degrees (12.4%, n = 14). see Table 3.4.

Table 7.5: Sample distribution by Crowdsourced Courier Experience

Crowdsourced Courier Experience	Frequency		Percent
1-2	27		23.9
3-4	65		57.5
5-6	19		16.8
7-8	2		1.8

The crowdsourced couriers in this study had mostly an experience in the range of 3-4 years (57.5%, n = 65). While nearly 25% of them had only 1-2 years' experience as a crowdsourced courier (n = 27). Moreover, the 5-6 years' experience courier's were only 16.8% (n = 19) and only 2 (1.8%) couriers had 7-8 years' experience. see Table 3.5

4.3 DATA NORMALITY ANALYSIS

To test the hypothesis the assumption of the data being normal needs to be checked. Therefore, normality of the data was checked by examining the skewness value along with the Kolmogorov-Smirnov and a Shapiro-Wilk normality test were conducted. Moreover, the histogram and Q-Q plot normality curves for the overall satisfaction score.

The overall satisfaction score can range from 36 to 180. The overall job satisfaction mean is $M = 113.33$ and standard deviation of $SD = 13.80$ (see Table 3.6). Also 0.051 skewness score shows this data is slightly asymmetric which supports the closeness of the overall job satisfaction to normality. The Kolmogorov-Smirnov test reported significant results (Test statistic = 0.06, $P = 0.2$) and Shapiro-Wilk test reported significant results (Test statistic = 0.99, $P = 0.58$). Finally, the Q-Q plot supported the normality as points don't deviate away from the straight line, also histogram showed overall job satisfaction score as being reasonably normal. Therefore, the assumption that the overall job satisfaction score is normal was confirmed.

Table 7.6: Overall Job satisfaction Descriptive statistics

Descriptive				
			Statistic	Std. Error
Overall Job Satisfaction	Mean		117.1604	1.30435
	95% Confidence Interval for Mean	Lower Bound	113.7457	
		Upper Bound	120.9150	
	5% Trimmed Mean		113.2996	
	Median		114.0000	
	Variance		190.548	
	Std. Deviation		14.374	
	Minimum		76.00	
	Maximum		145.00	
	Range		69.00	
	Interquartile Range		17.75	
	Skewness		.051	.228
	Kurtosis		-.196	.453

Table 7.7: Overall job satisfaction Normality test

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Overall Job Satisfaction	.058	112	.200*	.990	112	.582
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Figure 7.2: Normal Q-Q plot of Overall Job Satisfaction

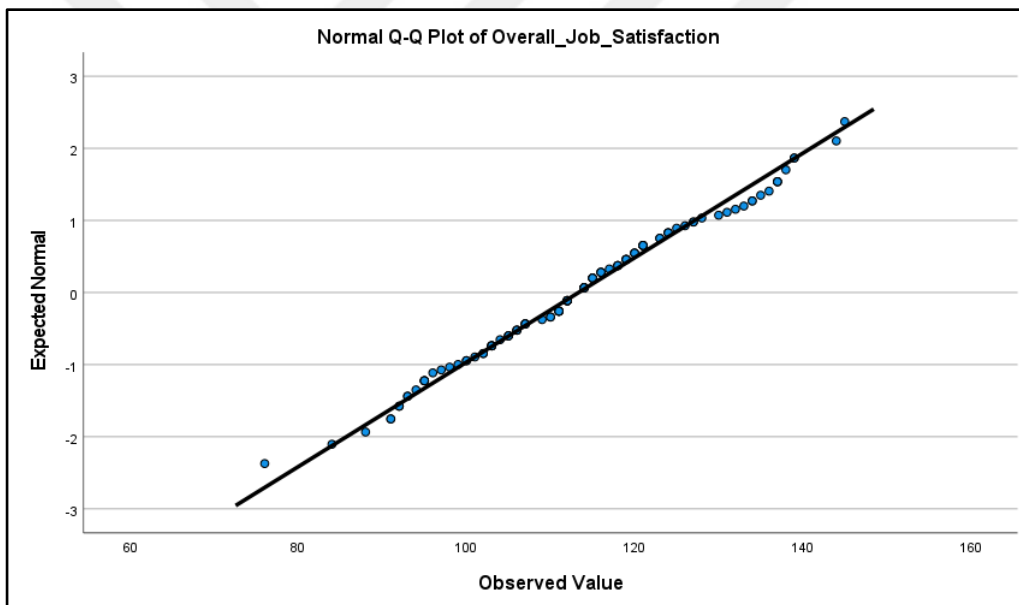
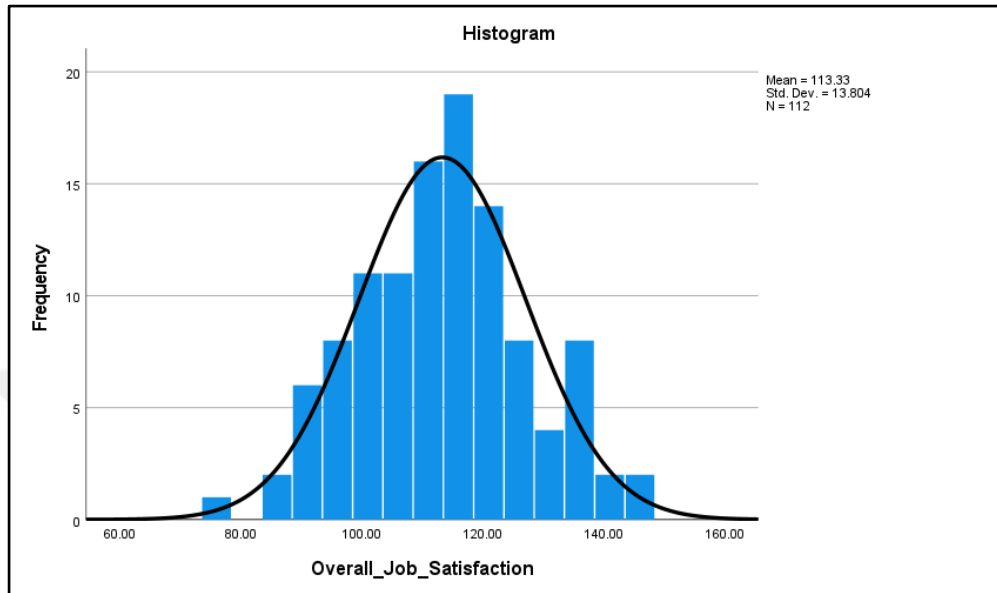


Figure 7.3: Overall Job satisfaction Histogram



One-Sample Kolmogorov-Smirnov Test

Table 7.8: All variables One-Sample Kolmogorov-Smirnov Test

Variable	Test Statistic	P-value
Pay	0.18	0.000
Promotion	0.18	0.000
Supervision	0.19	0.000
Fringe Benefits	0.17	0.000
Contingent Rewards	0.15	0.000
Operation condition	0.11	0.002
Coworkers	0.17	0.000
Nature of work	0.15	0.000
Communication	0.16	0.000
Overall Job Satisfaction	0.06	0.2

4.4 RELIABILITIES OF THE DATA

The reliability test of Cronbach's Alpha determined consistency of overall satisfaction and each facet of satisfaction then it was compared against the alpha coefficients presented by (Spector 1977). The results are presented below in Table 3.9

Table 7.9: Data Reliability Vs JSS Reliability

Subscales	N of Items	Reliability Statistics	
		Current Study Cronbach's Alpha	Spector's JSS Alpha
Pay	4	0.72	0.75
Promotion	4	0.672	0.73
Supervision	4	0.71	0.82
Fringe Benefits	4	0.68	0.73
Contingent Rewards	4	0.67	0.76
Operating conditions	4	0.58	0.62
Coworkers	4	0.70	0.60
Nature of work	4	0.70	0.78
Communication	4	0.71	.71
Overall Job Satisfaction	36	0.74	0.91

In the current study, the Alpha values of (Spector, 1997) subscales range from 0.58 to 0.72 and the overall job satisfaction is 0.74. 6 Subscales 'Pay', 'Supervision', 'Fringe Benefits', 'Contingent Reward', 'Nature of work' and 'communication' have scored alpha values equal to or above 0.7. While only 3 subscales 'Operating Conditions', 'Promotion', and 'Coworkers' scored alpha values lower than 0.7, which is expected usually in research that has psychological constructs being measured (Kline 1999). Moreover, it was also stated by (Nunnally 1978) that the reliability alpha value as low as 0.5 can be accepted. Further analysis was done to check if deleting any of the 4 items related to the operating conditions will increase its reliability but unfortunately there was no significant change if any item to be

deleted. The low alpha value of a specific sub-scale highlights a problem an item's reliability. However, the overall Job satisfaction alpha score is 0.74 which indicates that the scale was reliable.

4.5 OVERALL JOB SATISFACTION OF THE CROWDSOURCED COURIERS

Overall satisfaction analysis showed it has a Mean of $M = 117.16$ and $SD = 14.37$ (see Table 3.10). overall satisfaction score is the sum of the 36 items with the likert scale from 1 (Least satisfied) to 5 (very satisfied). The overall job satisfaction score ranges from 36 to 180 and the midpoint between them is 108. The Mean results $M = 117.16$ are slightly above the midpoint which shows that couriers are fairly satisfied.

Table 7.10: All JSS variables Means

Variable	Minimum	Maximum	Mean	Sd
Pay	4	18	11.5	3.3
Promotion	4	18	13.2	3.2
Supervision	4	18	12.7	3.3
Fringe Benefits	4	18	12.2	3.7
Contingent Rewards	4	20	12.9	3.5
Operating Conditions	4	20	12	2.8
Co-workers	4	19	14.5	3.1
Nature of work	4	19	13.8	3.5
Communication	4	20	14.1	3.4
Overall Job Satisfaction	76	145	117.16	14.37

The subscales mean scores can range from 4 up to 20 as the items are rated from 1 (Least satisfied) to 5 (very satisfied). The Co-worker subscale ($M = 14.5$) and Communication ($M = 14.1$) subscale were reported as the highest satisfaction subscale from the couriers. Next comes the Nature of work ($M = 13.8$), Promotion ($M = 13.2$), Contingent Rewards ($M = 12.9$), Supervision ($M = 12.7$), Fringe Benefits ($M = 12.2$) and Operating Conditions ($M = 12$). Finally, comes the Pay ($M = 11.5$) as the least satisfying subscale for the couriers.

4.6 CORRELATIONS OF SUB-SCALES WITH OVERALL JOB SATISFACTION

Intercorrelations among the subscales were examined by calculating Pearson correlation coefficients for the Overall satisfaction and its subscales for this data.

The Overall satisfaction has the highest positive correlation with the Communication ($r = 0.531$, $p < 0.01$) and Nature of work ($r = 0.512$, $p < 0.01$). The strong correlation with communication supported the claim that the healthy communication with the workers in different contexts were resulting in satisfied workers about their jobs (Ranganayakulu 2005). Also, the nature of work effect on satisfaction was proven, in other words the task must be designed in an interesting and self-challenging way so that it will keep the worker motivated and satisfied about his job (Pearson 1991).

The Overall job satisfaction correlated positively with Pay ($r = 0.475$, $p < .01$), Supervision ($r = 0.452$, $p < .01$) and Fringe benefits ($r = 0.450$, $p < .01$) with almost similar values. The Pay positive correlation supported the importance of the financial compensation for the satisfaction of the workers. The supervision factor correlation showed that good relations with supervisors will make couriers satisfied and more committed to the company. The Fringe benefits also affects job satisfaction as it serves as a personal achievement for the workers (Ranganayakulu 2005).

The results also showed almost equal positive correlations values for Promotion ($r = 0.407$, $p < .01$) and contingent rewards ($r = 0.402$, $p < .01$) against Overall job satisfaction. Finally, there was a positive correlation of the Overall job satisfaction with Co-workers ($r = 0.294$, $p < .01$) and Operating conditions ($r = 0.280$, $p < .01$) but it was the lowest among the other factors.

Overall, all the factors showed positive correlations with the overall job satisfaction rate.

Table 7.11:Correlations of Sub-scales against Overall Job Satisfaction

Correlations of Sub-scales against Overall Job Satisfaction											
		Pay	Promotion	Supervision	Fringe Benefits	Contingent Rewards	Operating Conditions	Co-workers	Nature of work	Communication	Overall Job Satisfaction
1.Pay	Pearson Correlation	1	.123	.250**	.103	.212*	.002	-.102	.125	.133	.475**
	Sig. (2-tailed)		.195	.008	.280	.025	.979	.285	.188	.161	.000
2.Promotion	Pearson Correlation	.123	1	.072	.149	-.015	.047	.050	.160	.089	.407**
	Sig. (2-tailed)	.195		.452	.116	.874	.621	.599	.091	.349	.000
3.Supervision	Pearson Correlation	.250**	.072	1	.218*	.126	-.098	-.068	.143	.094	.452**
	Sig. (2-tailed)	.008	.452		.021	.185	.303	.476	.133	.326	.000
4.Fringe Benefits	Pearson Correlation	.103	.149	.218*	1	.252**	.007	-.166	.157	.008	.450**
	Sig. (2-tailed)	.280	.116	.021		.007	.940	.080	.098	.934	.000
5.Contingent Rewards	Pearson Correlation	.212*	-.015	.126	.252**	1	-.020	-.079	.024	.076	.402**
	Sig. (2-tailed)	.025	.874	.185	.007		.832	.409	.803	.423	.000
6.Operating Conditions	Pearson Correlation	.002	.047	-.098	.007	-.020	1	-.042	.198*	.126	.280**
	Sig. (2-tailed)	.979	.621	.303	.940	.832		.663	.036	.185	.003
7.Co-workers	Pearson Correlation	-.102	.050	-.068	-.166	-.079	-.042	1	.103	.293**	.294**
	Sig. (2-tailed)	.285	.599	.476	.080	.409	.663		.281	.002	.002
8.Nature of work	Pearson Correlation	.125	.160	.143	.157	.024	.198*	.103	1	.027	.512**
	Sig. (2-tailed)	.188	.091	.133	.098	.803	.036	.281		.780	.000
9.Communication	Pearson Correlation	.133	.089	.094	.008	.076	.126	.293**	.027	1	.531**
	Sig. (2-tailed)	.161	.349	.326	.934	.423	.185	.002	.780		.000
10.Overall Job Satisfaction	Pearson Correlation	.475**	.407**	.452**	.450**	.402**	.280**	.294**	.512**	.531**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.003	.002	.000	.000	
** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).											

4.7 FINDINGS ABOUT EFFECTS OF DEMOGRAPHIC FACTORS ON JOB SATISFACTION

In the following sections the effect of demographic factors like Age, Education and Experience on the couriers overall satisfaction was investigated.

Analysis of Job Satisfaction findings depending on the Age

Due to the normality of the Overall satisfaction variable, the one-way ANOVA test was used to test difference in job satisfaction based on the Age, however for other variables Kruskal-Wallis was performed as it is not normally distributed. The results showed statistically significant differences between group means as determined by *one-way ANOVA* ($F = 3.09$, $p = 0.008$). We can see that the significance value is 0.008, which is below 0.05. Moreover, as shown in the table 4.10, the lowest level of satisfaction is related to the ages of 20 to 24 years and the highest level of satisfaction is related to the ages of 45 to 49 years. Therefore, it is obvious that older employees have more job satisfaction rate.

Table 7.12: Age Kruskal-Wallis and ANOVA test

Age	Mean(sd.)							Kruskal-Wallis	P-value
	20-24	25-29	30-34	35-39	40-44	45-49	≥50		
Pay	8(1.4)	11.2(2.2)	11.05(3.7)	10.7(3.6)	13.9(3.1)	13.2(1.7)	13.6(1.1)	19.2	0.004
Promotion	11(4.2)	12.3(3.9)	13.05(3.7)	14.6(1.2)	13.2(4.9)	15(1)	13.2(3.2)	5.9	0.4
Supervision	9(0.7)	12.7(3.6)	12.4(3.1)	13.2(2.4)	11.8(4.8)	15(1)	14.3(1.1)	8.3	0.4
Fringe Benefits	9.5(2.1)	11.8(3.8)	12(3.6)	12.1(3.8)	14(3.4)	10(3.9)	14.6(2.5)	10.5	0.1
Contingent Rewards	8(1.4)	12.1(4.1)	13.02(2.7)	12.6(4.2)	14.4(3.1)	14.6(1.6)	14.3(2.08)	8.9	0.1
Operating conditions	11.5(0.7)	10.4(2.6)	12.07(2.9)	12.7(3.08)	12.4(2.6)	13.2(1.3)	12.3(2.5)	12.7	0.04
Coworkers	13.5(2.1)	14.4(3.2)	14.7(2.7)	14.2(3.07)	14.8(4.2)	16.8(1.3)	12.6(6.6)	6.9	0.3
Nature of work	13(1.4)	12.7(4.02)	13.05(4.1)	13.8(2.4)	15.8(1.5)	17(1.5)	17(1.7)	20.1	0.003
Communication	15(0)	14.04(3.1)	14.3(3.3)	13.7(3.7)	15.1(3.5)	14(5.1)	11.3(5.6)	3.6	0.7
Overall Job Satisfaction	99(5.6)	112(13.03)	115.8(14.5)	116.2(14.8)	127.1(10.7)	127(12.1)	125.3(5.6)	F=3.1	0.008

Analysis of Job Satisfaction findings depending on the Education level

Due to the normality of the Overall satisfaction variable, the one-way ANOVA test was used to tests if there is change in job satisfaction based on the education level, however for other variables Kruskal-Wallis was performed as it is not normally distributed.

The results in table 4.11 showed no statistically significant differences between group means as determined by *one-way ANOVA* ($F = 1.7$, $p = 0.18$). The p-value is higher than 0.05, therefore, there is not a statistically significant difference between job satisfaction and the educational level.

The level of satisfaction in the three educational groups is very close to each other which does not support the claim by (Sharma and Jyoti 2009) about the positive relation between education and satisfaction.

Table 7.13: Education Kruskal-Wallis and ANOVA test

	Mean(sd.)			Kruskal-Wallis	P-value
Education Level	High School	Associate Degree	Undergrad		
Pay	10.8(3.1)	12.04(3.6)	10.9(2.7)	5.5	0.06
Promotion	12.5(3.6)	13.5(2.9)	13.9(3.2)	3.03	0.2
Supervision	12.8(2.7)	13.08(3.2)	10.7(4.2)	4.04	0.1
Fringe Benefits	11.1(3.7)	13.3(3.3)	10.4(3.9)	13.7	0.001
Contingent Rewards	12.4(3.8)	13.1(3.2)	13.5(3.5)	0.4	0.7
Operation condition	12.05(2.8)	11.7(2.7)	13.1(3.2)	1.5	0.4
Coworkers	14.5(2.4)	14.5(3.7)	15.07(2.3)	1.4	0.4
Nature of work	13.9(3.1)	13.5(3.9)	14.6(1.8)	0.2	0.8
Communication	14.1(2.6)	14.5(3.6)	12.3(4.5)	5.2	0.07
Overall Job Satisfaction	114.5(13.5)	119.4(14.5)	114.7(15.2)	F=1.7	0.18

Analysis of Job Satisfaction findings depending on the years of experience as a crowdsourced courier

Due to the normality of the Overall satisfaction variable, the one-way ANOVA test was used to tests if there is difference in job satisfaction based on the years of experience, however for other variables Kruskal-Wallis was performed as it is not normally distributed.

There were statistically significant differences between group means as determined by *one-way ANOVA* ($F = 2.7$, $p = 0.04$). We can see that the significance value is 0.04, which is below 0.05. Which makes a statistically significant difference between satisfaction and the years of experience.

As can be seen in the table 14, the lowest satisfaction level is related to the he years of experience of 1 to 2 years. The highest satisfaction level is years of experience of 7-8 years. Therefore, it can be concluded that employees with more work experience have higher job satisfaction rates.

Table 7.14: Years of experience Kruskal-Wallis and ANOVA test

	Mean(sd.)				Kruskal-Wallis	P-value
Experience	1-2	3-4	5-6	7-8		
Pay	10.9(2.6)	11.5(3.4)	11.9(4.1)	13(0)	4.2	0.2
Promotion	12.6(3.2)	13.1(3.3)	14.7(2.9)	14(1.4)	8.2	0.04
Supervision	11.7(2.6)	13.07(3.2)	12.6(4.3)	0.7(0.50)	9.08	0.02
Fringe Benefits	11.7(3.4)	11.9(3.8)	13.8(3.7)	12(0)	6.4	0.09
Contingent Rewards	12.2(301)	12.9(3.7)	14.1(3.5)	13.5(2.1)	5.2	0.1
Operation condition	12.6(2.5)	11.3(2.9)	13.05(2.3)	15(0)	9.5	0.02
Coworkers	14.4(2.6)	14.3(3.4)	15.5(3.2)	17(1.4)	5.6	0.1
Nature of work	13.5(2.9)	13.8(3.4)	13.7(4.4)	17.5(2.1)	4.6	0.2
Communication	14.1(2.3)	14.09(3.5)	14.2(4.7)	15.5(3.5)	1.8	0.5
Overall Job Satisfaction	114.07(14.4)	116.2(13.4)	123.4(15.9)	133(8.4)	F=2.7	0.04

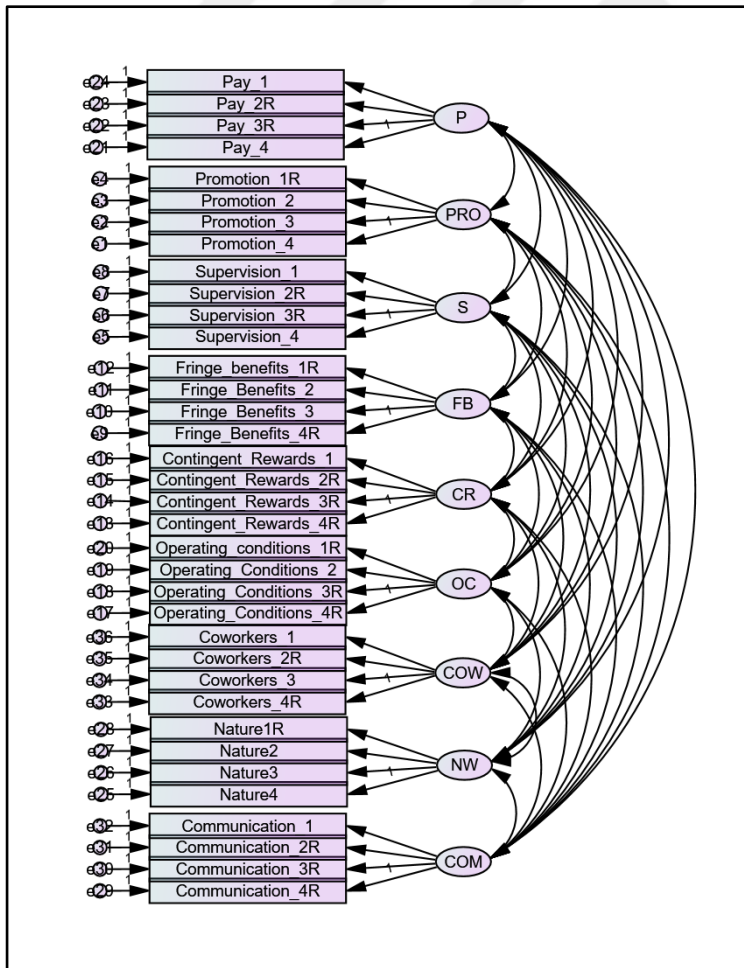
4.8 CONFIRMATORY FACTOR ANALYSIS RESULTS FOR THE JSS SCALE

As mentioned previously in the literature, Job satisfaction of crowdsourced couriers was investigated under the previously mentioned nine dimensions. However, to test nine-factor structure JSS scale in this study, AMOS 26 software was used for the confirmatory factor analysis.

To estimate the model, the Maximum likelihood estimation method was used. Also, to evaluate the model fit the chi-square (X^2), comparative fit index (CFI) and root mean square error of approximation (RMSEA) were examined (Hu & Bentler 1998).

In figure 3.4 below is the primary model

Figure 7.4: Primary model



The original nine-factor model with 36 items (see figure 10) showed an overall insufficient fit to the data (χ^2 (558) = 678, $p < .001$, CFI = .0844, RMSEA = .044) (see Table 15). Unfortunately, this indicated poor fit. Also, in the full model there was some factor's items loading poorly, like 2 Promotion items (Promotion_3 (0.38), Promotion_4 (0.44)), 2 Operating Conditions items (Operating_conditions2 (0.23), Operating_conditions_4R (0.44)), 1 Communication item (Communication1 (0.46)), 1 Nature of work item (Nature1R (0.47)) and 1 Fringe Benefits item (Fringe_Benefits_4R). Apart from these items, the other factor items loadings were between 0.5 and 0.86. The poor items were trimmed from the model and CFA was conducted again. , but this time the model performed well it showed an acceptable level of fitness to the data (χ^2 (341) = 395, $p = 0.023$, CFI = .912, RMSEA = .038) (see Table 3.15).

Table 7.15: All CFA Models

Model	χ^2	df	CFI	RMSEA
Full Model	678.250	558	0.844	0.044
Trimmed Model	395.04	341	0.912	0.038

To evaluate the extent of explanation and fit of the data by the conceptual model, more indicators of fit and Goodness-fit of the CFA trimmed model are reported. Table 16 lists some important fit indices and acceptable ranges for proper model fit for each index. In the last column of the table the indexes of this model listed. In this model, the relationships between research variables can be seen in the output of AMOS software in the Appendix.

Table 7.16: Goodness-fit indexes for CFA of Trimmed Model

Goodness-fit indexes for CFA of Trimmed Model		
Output Value	Acceptable Range	Index
χ^2	395.04	Do not have
DF	341	Do not have
χ^2/DF	1.158	<3
PCLOSE	0.89	0.9 <
RMSEA	0.038	0.08 >
CFI	0.912	0.9 >
GFI	0.82	0.9 >
IFI	0.921	0.9 >
TLI	0.895	0.9 >

According to fit indexes the model performs well and can be acceptable.

Figure 7.5:Full model

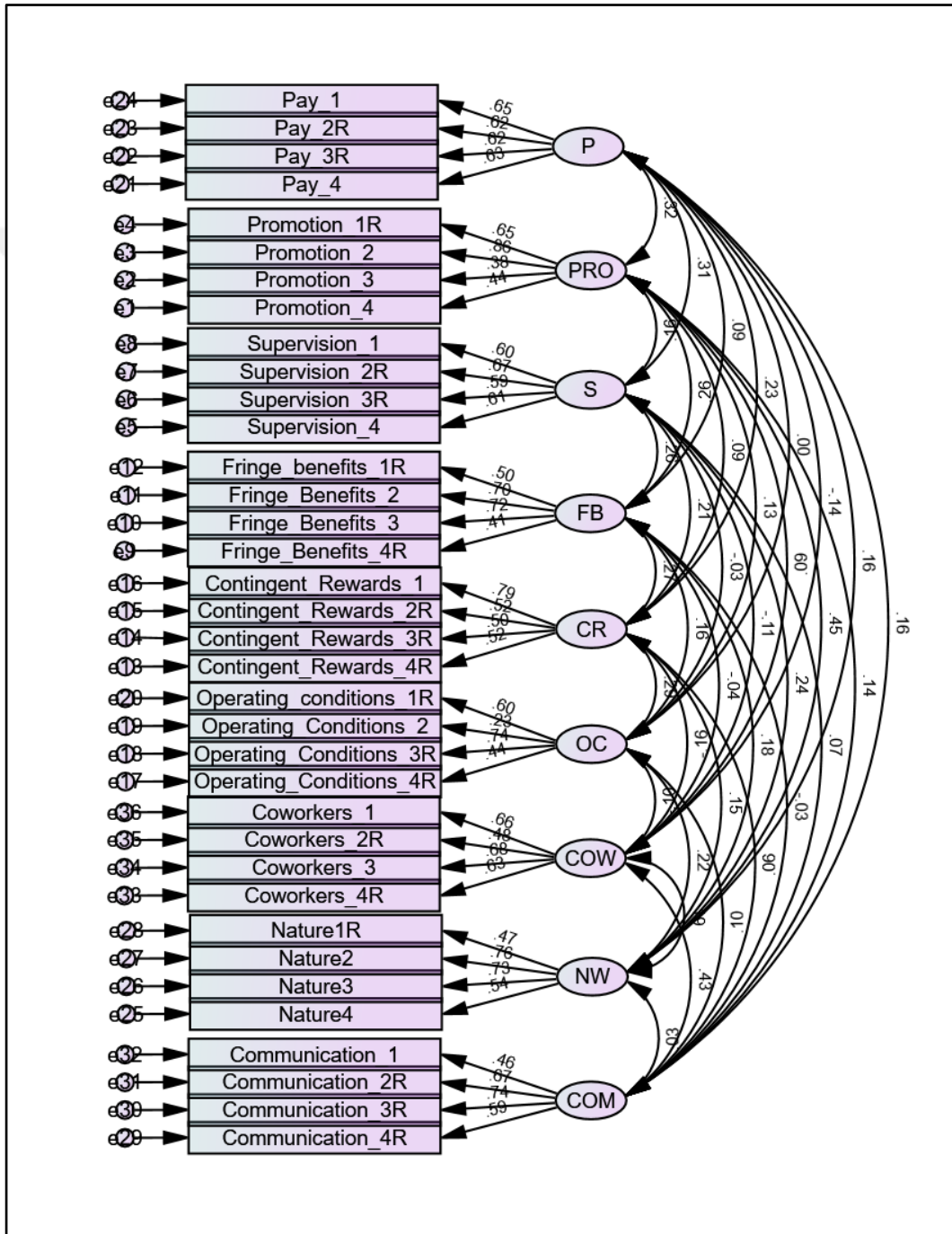
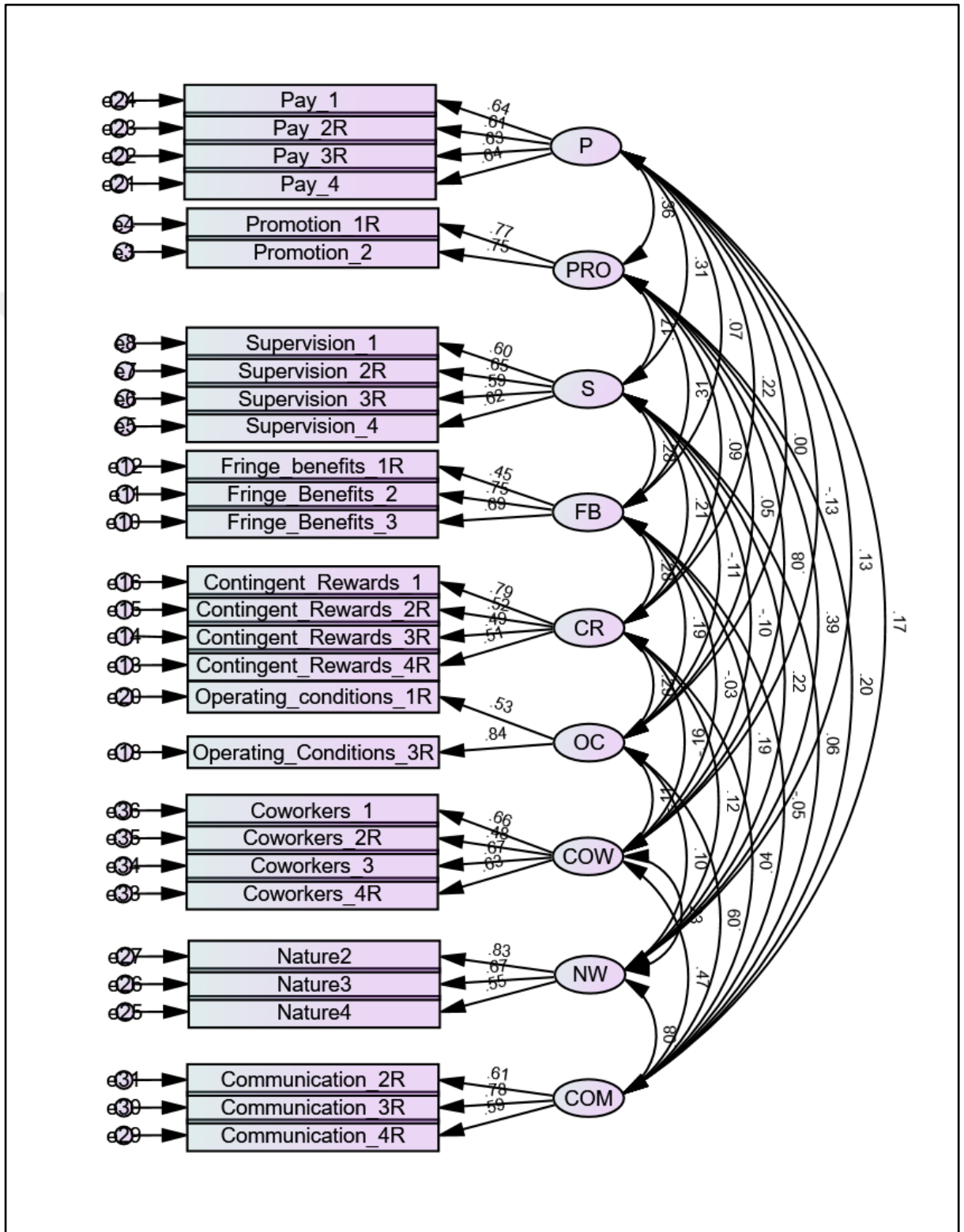


Figure 7.6: Trimmed Model



5. DISCUSSION

In this section the research questions is answered then the limitations of the research along with the managerial suggestions and finally recommendations for further research will be discussed.

5.1 DISCUSSION OF THE STUDY RESULTS

5.11 Factors Affecting Job Satisfaction of Crowdsourced Couriers:

Research Question 1: What are the factors affecting job satisfaction of crowdsourced couriers?

Pearson correlation analysis was conducted for all nine categories of the job satisfaction factors to answer this question. The overall job satisfaction (combination of all categories) had a significant positive strong correlation coefficient with the nine categories. Moreover, correlation between satisfaction subscales and it showed the highest correlation between categories to be between Communication and Coworkers ($r = 0.293$, $p < .01$), which means that couriers who are satisfied from the communication in their working environment are also satisfied with their relations with their colleagues. In the same way, Fringe Benefits and Contingent rewards showed a significant positive correlation ($r = 0.252$, $p < .01$) which can be translated that a courier who is appreciated and recognized (satisfied from Contingent rewards) will be satisfied from the fringe benefits he is receiving. Another positive significant correlation was between Pay and Supervision ($r = 0.250$, $p < .01$), this showed that a courier who is satisfied about his supervisor's performance and has good relationship with him, the courier will also be satisfied about the financial compensation (Pay) he is getting. Overall, this analysis confirmed the effect of the factors extracted out of the review on the satisfaction of crowdsourced couriers. Below the factors from the highest to lowest effect on crowdsourced courier's Job satisfaction based on its correlation with the Overall job satisfaction.

Table 8.1: Factors ranked based on correlation index with Overall job satisfaction

Factor	Correlation Index
1.Communication	(r = 0.531, p < 0.01),
2. Nature of work	(r = 0.512, p < 0.01)
3. Pay	(r = 0.475, p < .01)
4. Supervision	(r = 0.452, p < .01)
5. Fringe Benefits	(r = 0.450, p < .01)
6. Promotion	(r = 0.407, p < .01)
7. Contingent Rewards	(r = 0.402, p < .01)
8. Co-workers	(r = 0.294, p < .01)
9. Operating Conditions	(r = 0.280, p < .01)

5.12 Demographic factors affecting Job Satisfaction of Crowdsourced Couriers:

Research Question 2: How do crowdsourced couriers differ in levels of job satisfaction based on their biographical variables?

The level of satisfaction will change based on the demographic variables (Age, Education level & Years of Experience). Therefore, to answer this question the one-way ANOVA test was used to tests if there is any difference in job satisfaction according to demographic variables.

Age

Due to the normality of the Overall job satisfaction variable, the one-way ANOVA test was used to tests if there is any difference in in job satisfaction according to Age. We can see that the significance value is 0.008, which is below 0.05 which is a statistically significant difference between satisfaction and the age. Moreover, as shown in the table 12 in section 4.7, the lowest satisfaction level is for the ages of 20 to 24 years and the highest job satisfaction level is related to the ages of 45 to 49 years. Therefore, the older employees, the more satisfaction rate is observed. This recalled the opinions linking the older ages with

higher job satisfaction since older employees got used to their job over time, on the other side, a younger employee has high expectations from his job that if he did not receive, it will lead him to be dissatisfied about his job (Okpara 2004).

Pointing out that older crowdsourced couriers were more satisfied than the younger couriers.

Education Level

Due to the normality of the Overall satisfaction variable, the one-way ANOVA test was used to tests if there is any difference in job satisfaction based on the education level.

The p-value higher than 0.05, therefore, we can conclude that there is a difference between job satisfaction and the educational level are not statistically significant.

Years of Experience

We can see that the significance value is 0.04, which is below 0.05. and, therefore, there is a statistically significant difference between job satisfaction and the years of experience.

As can be seen in the table 14 in section 4.7, the lowest satisfaction level is related to the years of experience of 1 to 2 years. The highest satisfaction level is 7-8 years. This supported the claim that workers with more years of experience in a specific job are satisfied about their jobs more than workers with less years, according to (Oshagbemi 2000). Therefore, it can be concluded that couriers with more work experience have higher job satisfaction rates .

5.13 Overall Job Satisfaction of Crowdsourced Couriers in Istanbul:

Research Question 3 : How is the overall job satisfaction rate of crowdsourced couriers in Istanbul?

Overall satisfaction rate among the Crowdsourced couriers in Istanbul was measured, therefore the means were calculated for the Overall Job satisfaction score along with the standard deviation. Moreover, the same calculation was done for the subscales (to check their satisfaction rate about every factor alone.

The results showed that the couriers are fairly satisfied as the Mean for the overall job satisfaction rate (M =117.16) was over the midpoint (108 which is between min score value 36 and max score value 180). Regarding the other subscales, the Co-worker subscale (M =14.5) and Communication (M =14.1) subscale were reported as the highest satisfaction subscale from the couriers. Next comes the Nature of work (M =13.8), Promotion (M =13.2), Contingent Rewards (M =12.9), Supervision (M =12.7), Fringe Benefits (M =12.2) and Operating Conditions (M =12). Finally, comes the Pay (M =11.5) as the least satisfying subscale for the couriers. The Overall satisfaction rate along with the subscales scores show that there is space for improvement in terms of the factors affecting the couriers job satisfaction.

Below is a table representing the factors from the highest to lowest effect on crowdsourced courier's Job satisfaction

Table 8.2: Factors ranked based on mean

Factor	Mean of the 4 items of each sub-scale
1.Co-workers	(M =14.5)
2.Communication	(M =14.1)
3.Nature of work	(M =13.8)
4.Promotion	(M =13.2)
5.Contingent Rewards	(M =12.9)
6.Supervision	(M =12.7)
7.Fringe Benefits	(M =12.2)
8.Operating Conditions	(M =12)
9.Pay	(M =11.5)

5.2 MANAGERIAL SUGGESTIONS:

Measuring the crowdsourced couriers job satisfaction rates from time to another and endorsing it by improvement actions will keep them motivated to keep working with the company and it will establish a trust relationship with them. The financial compensation (PAY) was the factor with the lowest satisfaction rates among the couriers, and it was the third highest in the order of correlation index with the overall job satisfaction score, which shows even due to its strong effect on the couriers satisfaction the companies are not providing a satisfying payment. Therefore, the company needs to re-evaluate and build a new compensation policy under a win-win mentality and not only increasing the financial compensation alone. Therefore, dealing with the courier as a partner and informing him that as much as the company makes money (as much as you work) you will make money. This will help in reducing the turnover rate among these couriers and improve the service. Another item with a low rate on the JSS scale was the Contingent Rewards, which represents the recognition that a courier gets when he outperforms. Therefore, the companies must develop a gamification system with certain rules that measures the performance of each courier fairly and recognize him among his colleagues(i.e., giving him more deliveries, etc..) if he performed better. The fringe benefits also showed positive correlation with the overall job satisfaction, therefore improving fringe benefits will develop higher satisfaction rates in the working environment and the couriers to compete with their colleagues and perform better.

5.3 LIMITATIONS & RECOMMENDATION FOR FURTHER RESEARCH:

Like any research careful consideration and precautions are taken but still there must be some limitations according to each research. First, the sampling technique used in this research was based on the Z-score formula which may not be the best way to represent the targeted population, despite the efforts the researcher was able to gather only 112 surveys. Moreover, there was no information available from the public registries or the companies in Turkey or even Istanbul about the number of crowdsourced couriers. Also, all crowdsourced based delivery companies rejected several attempts of getting any data due to their strict policies. Also, there was no similar research found that can be used as a reference. Therefore, conducting this study in a place with official numbers of crowdsourced couriers will help in increasing the accuracy and validity of the research. Secondly, this study was conducted in Turkey specifically in Istanbul which makes generalization to be taken carefully on other populations while also considering the cultural, socio-demographic, and economic differences. Conducting this research with a better targeted population along with a systematic sampling technique will solve the issue with generalization. Finally further research with larger scales will help in solving the sample size problem.

6. CONCLUSION

This research was studying the job satisfaction factors of crowdsourced couriers. While also testing if the demographic variables (can affect their overall job satisfaction rate. Nonetheless, the current job satisfaction among the crowdsourced couriers in Istanbul. To be able to achieve these goals and crowdsourcing concept was presented along with its advantages and challenges if it is employed properly. Then major job satisfaction theories, related motivation theories and extrinsic and intrinsic job satisfaction factors were discussed. The main factors affecting job satisfaction were explored in the literature and the consequences of having a dissatisfied or demotivated worker were mentioned briefly.

Some of the factors affecting job satisfaction that were extracted from the literature, were confirmed through unstructured interviews with experts working directly with crowdsourced couriers. Then the JSS scale was chosen as the suitable scale to be used in this research. However, after distributing the surveys and entering the data, CFA was conducted and only 29 items are left.

To measure correlation between the subscales and overall satisfaction, Pearson correlation analysis was conducted, results showed highest positive correlation with the Communication and Nature of work. While Co-workers and Operating conditions reported the lowest correlations with the overall job satisfaction among the other factors. The means of the overall satisfaction and subscales were calculated, results showed that the couriers are almost satisfied. Moreover, couriers were mostly satisfied from Co-worker factor and least satisfied from the pay factor.

The overall job satisfaction was calculated by ANOVA test among couriers based on their demographic variables. The older couriers with more experience are more satisfied than the younger less experienced couriers. On the other side, education level didn't affect the overall job satisfaction levels.

The scale was proven Reliable as it's Cronbach's alpha was equal to 0.74.

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