

Level Of Work Engagement Of Workers Based On Gamification Of Work Using Multi-Factor Evaluation Process (Mfep) Method

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Abstract

Advances in information technology, including mobile and digital technology, have revolutionized how people interact in various fields. Unlike traditional communication methods between citizens, mobile technology can improve communication and enable people to be actively involved in economic transactions, which affect the demand and supply of goods and services. Apart from the increasing importance of electronic participation in goods and service transactions, the potential factors affecting community involvement in e-business, especially in online transportation services, have not been investigated in depth during this COVID-19 pandemic. Based on the octalysis framework, this research explores a number of factors that influence people's inclinations to engage in electronic transactions involving online transportation services using responses from Central Java residents. The results show that the motivational factors of meaning, accomplishment and social influence are the highest, with the level of closeness being at the level of job demand, without reducing the meaning of others, such as Job and Personnel Resources.

Keywords: Gamification of work, Octalysis, MFEP, Work engagement.

I. Preface

The increasing use of web and mobile technology, which is widely referred to as digital technology, has significantly influenced the way industry and the world of work provide services to citizens [1]–[3]. This revolution also influences how citizens connect and communicate, with people beginning to embrace mobile commerce without hesitation [4]–[6]. This condition provides opportunities for business people to expand and change their interactions by strengthening applications using mobile technology in various fields [5], [7], [8]. These include companies that use applications for the land transportation segment, such as Go-Jek in Indonesia.

Go-Jek is a phenomena in Indonesia, where people accept it as part of the evolution of land transportation services employing gamification-based smartphone applications [9]. The willingness of the community to adopt

new technology shows that transactions made using this mobile application can provide carrying capacity to meet the needs of the drivers' life [10]. Go-Jek has expanded its business power by adding new features to the community, which aligns with the digital business transformation concept. The public is served through the Go-Send and Go-Mart features for purchasing retail goods, Go-pay for paying cash-less transactions, Go-Food for buying food and others, where these services can be included in e-business and e-commerce types. Furthermore, Go-Jek uses the internet as a medium of communication to consumers. Transactions have been provided for online and offline payments. The service mechanism provided uses a service or courier, where the drivers work as partners for Go-Jek to conduct electronic transactions through gadgets.

Online services provided in the performance of digital technology by providing gamification-

based work values such as those carried out by online transportation service can only be performed properly when the public is willing to make transactions with a high level of trust [11], [12]. The same thing also happens from the driver's side. The electronic transaction process will not run well when the driver is unwilling to accept orders and has no trust in consumers or the online application manager. Many studies on consumer perspectives have been conducted when it comes to the topic of electronic transactions using applications [11], [13], [14]. Few studies discuss the effect of gamification on the involvement and willingness of drivers to run a mobile application-based business that can support the transformation of people's transactions. This is viewed from the perspective of the Octalysis framework, and its relationship to work engagement.

This needs to be explored more deeply because electronic transactions in the digital era have the potential for sustainability aspects for future drivers with different perspectives. The engagement side needs to be scrutinized to see the aspects that influence drivers to conduct the concept of mobile technology-based gamification work. This has been proven by the number of drivers under Go-Jek of 2 million partners in 2020. The Octalysis Framework promises a gamification framework that can see the use of gamification from several perspectives to increase the aspect of engagement [15]–[19] of the socio-technical environment.

Since e-business with the concept of gamification is an emerging field, this research aimed to investigate the degree of closeness as a form of trust and underlying subjective norms influencing the drivers' intentions to engage. Specifically, it tries to answer the following questions, at what level does the closeness of a driver as a partner affect the intention to engage in gamification-based e-business in online transportation applications in Indonesia? This paper contributes to knowledge that is part of e-business and e-commerce by investigating the role of gamification and work engagement.

The research begins with a literature review, and after this, the theoretical background for the study is considered. A research model is then proposed, before developing the hypotheses, and the approach adopted is described. Finally, a discussion of the results was conducted, and conclusions were drawn.

2. Literature review

2.1 e-business

e-business applications consist of e-commerce and e-marketing, enabling companies to carry out their daily activities with partners and target markets to develop and deliver value propositions for enterprise customers [20]–[22]. Some studies argued that the implementation is based on several indicators such as company size, information technology knowledge and the level of HR education related to the e-business cycle [23]–[26]. It provides various advantages at various levels, including company, industry, country and global levels [27], where the competitiveness of e-business can be seen from multiple perspectives, such as market, socio-cultural, technological, and economic dimensions [27]–[29].

Go-Jek has implemented e-business with an increasingly large-scale company and has partnered with drivers, administrative staff and various business partners, utilizing information technology and cash-less payment methods as well as cash payments, which provide convenience for consumers [30], [31]. From the literature obtained, it can be stated that Go-Jek, as the object of this research, has implemented e-business well. In addition, the perspective of drivers referred to as Go-Jek partners want to be explored more deeply for their willingness to be involved as an important factor in the e-business cycle.

2.2 Employee Engagement

Employee engagement is the concept of involvement and relationship between an organization or company and the employees. Meanwhile, employee involvement is an

emotional and intellectual involvement related to aspects of work, organization and relationships with other workers and their leaders [32]–[35]. There will be high work motivation [36], [37] to maintain the goals of the company when an employee has an active engagement and involvement in the world of work. Furthermore, employee engagement has an important meaning for the sustainability of company performance.

In the digital transformation era, there is also a change in human behavior, including employees who have work engagement with the world of work. Behavior change is a necessity where digital technology positively helps performance more quickly and efficiently [2], [38], [39]. On the other hand, digital technology can also reduce direct interaction, hence digital transformation in the business world needs to be anticipated [40]–[42] to maintain employees' emotional and intellectual involvement.

Work engagement in terms of closeness and involvement, can be grouped into three levels, namely (1) job resources, (2) personal resources and (3) job demand, which is often referred to as JD-R Theory [32] [43]. These three levels can be explored more deeply on the research object, namely the drivers who partner with online transportation service providers.

The literature shows that any type of business including online transportation services such as Go-Jek, the object of research, should pay attention and find the best strategy to maintain employee or work engagement in the world of work. In particular, drivers who run e-business transactions are referred to as partners by Go-Jek. Until now, efforts to maintain employee engagement continue to be conducted with the concept of gamification at work. However, what needs to be explored and researched is which level of closeness indicators influence drivers.

2.3 Gamification

Gamification comes from the concept of play which was initially used in game design [44] but later as a medium of Education[45], [46]. It

also used in other fields, including business, tourism and marketing [18].], [47], [48]. In particular, the concept adopts game behaviours and components, such as the existence of a victory badge, level of the game, giving challenges and rewards in the form of achievements [46], [49], [50] to players. This concept is known as gamification of work when applied in world of work [9], [51], where the game component is used to motivate employees. Gamification has positive values that can be useful, including 1) information, 2) empathy, 3) persuasion, 4) economics, and 5) ideology [52]. It can provide strength for the company in the form of employee engagement, which is caused by factors related to [53] 1) satisfaction, 2) intrinsic and extrinsic motivation, 3) achievements or progress 4) recognition, and 5) trust.

From various opinions and research results, gamification is a process of applying the elements used in games to various life contexts, including the world of work, to motivate and increase the involvement and closeness of users. With regards to Go-Jek, gamification is implemented in the form of services to consumers and drivers as partners. In particular, drivers get the opportunity to earn more income and bonuses when they have met work targets for a certain period, but are punished when consumers give a star rating of less than 4 [30], [54]. The concept used is the gamification of work, which aims to motivate drivers as partners who are productive but have the value of flexibility. The factors that influence drivers' level of involvement and closeness in working [53] need to be explored more deeply.

2.4 Octalysis Framework

Many methods or frameworks can be used to determine the extent to which the implementation of the gamification concept can run, such as the Mechanics, Dynamics, Aesthetics (MDA) method [55]–[57], which considers three aspects as indicators.

In addition to the MDA, another method is known as the Octalysis Framework. This framework classifies a person's desire to act

and the intention and motivation to run a “game” into white and black hats [58]. White Hat motivators are considered to be positive, while Black Hats are considered as negative [16], [58]. According to Chou, everyone is motivated to conduct activities that are not always the same and tend to be different in terms of motivation in the realm of the white or black hat [16], [58], [59].

The White Hat side has indicators that explain the sense of success through mastery of skills or recognition of creativity, artistic and social, thus making “game” players feel good, comfortable and strong. It is divided into intrinsic and extrinsic motivation as part of the right and left brain, representing the logical and intellectual aspects [59], [60]. Black Hat Gamification, which denotes negative motivation, pushes a person to take certain actions out of fear of losing, curiosity about upcoming events, or an attempt to achieve impossible things.

Octalysis emphasizes that negative drives can inspire as much motivation as positive ones, but balancing the two is critical to achieving satisfactory results. It highlights that successful gamification requires consideration of left and right sides of the brain often referred to as the core drive. The eight core drives arranged on the left and right sides are meaning, achievement, empowerment, ownership, social influence, scarcity, uncertainty, and avoidance [58].

Meaning implies that people is motivated to do something greater than themselves. In a game, every player will feel great when the player manages to surpass a certain level or challenge. This should also apply when a worker is motivated to show prowess beyond a given task, using the best time possible to complete the job.

Accomplishment denotes development and achievement that encourages a person to make progress, develop skills, and finally overcome challenges. The different achievements in this core are points, badges, leader-boards, and rewards. Applying this metric to the business world, it seems to reason that a worker will feel

more encouraged when rewarded in the form of bonuses, prizes, and other forms of public acknowledgment.

Empowerment of Creativity and Feedback is an indicator that motivates a person in gameplay to be involved in the creative process where everyone should try continuously to get the right pattern in improving the quality of their performance. These creative efforts can also be based on feedback obtained from other players. This can also be applied in the world of work, where everyone needs to try optimally to find the right work pattern in completing their tasks, and be able to observe, imitate and make modifications.

Ownership and possession are indicators of user motivation to own something. When a player is confident in his holdings, he will find ways to improve upon them. To apply this idea to the working environment, consider the idea that an employee will perform at a higher level when they have a positive relationship with employer. Social Influence and Relatedness is a motivation that combines all the social elements, such as guidance, support, solidarity, sensitivity, competition, and also a sense of acceptance. Furthermore, when a player observes a friend who is exceptional at a skill or possesses something extraordinary, he will be motivated to attain the same level. This concept should also be applied in the world of work.

Scarcity and Impatience is the motivation for a player who wants something due to the difficulty. In a game, when a level cannot be passed because of time constraints, the player will try to obtain a chance to win in various ways, such as buying points, repeating an hour later, and continuous repetition.

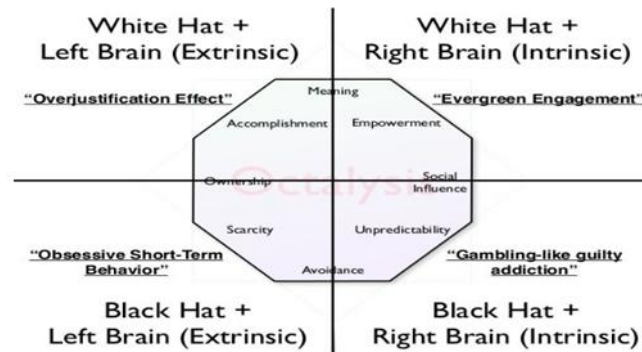
Unpredictability and curiosity are harmless motivations to determine the next line of action. After winning a level, a player is expected to make an advancement and be curious about the next challenge.

Loss and avoidance are motivations based on avoiding something negative from happening. Every player in a game will attempt to avoid

failure, as they do not wish to lose a chance at each stage.

From the explanation on octalysis, when this concept is applied to the world of work, it will have an impact on effective engagement for

workers and companies [16], [53], [59]. Therefore, this research wants to explore the implementation of gamification of work for drivers willing to become partners for online transportation providers, such as Go-Jek.



2.5 Multi-Factor Evaluation Process (MFEP)

The Multi-Factor Evaluation Process (MFEP) is a method fundamental to the development of methods in the Decision Support System. This method is conducted by **subjective** and **intuitive** assessment of indicators or factors causing a problem considered important [61], [62]. These considerations are by giving a

weighting system based on a **priority scale** considering the level of importance [61]–[64]. The steps that should be met to resolve cases using MFE are (1) defining the criteria/factors causing problems and their weights; (2) Calculating the Evaluation Weight Value (**NBE**); (3) Calculating the Total Evaluation Weight (**TBE**); (4) ranking for a decision [61]–[64].

The NBE calculation is as follows:

$$NBE = NBF * NEF$$

Information:

NBE = Evaluation Weight Score (Nilai Bobot Evaluasi)

NBF = Value Weight Factor (Nilai Bobot Factor)

NEF = Factor Evaluation Value (Nilai Evaluasi Factor)

While the TBE calculation formula is as follows:

$$TBE = NBE1 + NBE2 + NBE3 + \dots + NBE_n$$

Information:

TBE = Total Evaluation Weight (Total Bobot Evaluasi)

NBE = Evaluation Weight Score (Nilai Bobot Evaluasi)

MFEP is the basis for determining the level of closeness in work carried out by drivers as partners for online transportation service providers. The work concept applied uses a gamification perspective in work.

3. Research Objectives

This research aims to answer the following questions, “How does the proximity of drivers

as partners influence the intention to operate a gamification-based e-business in Indonesia by working for an online transportation service company?” The main focus is to determine how the concept of gamification-based work can influence the level of work closeness between drivers and online transportation service providers.

Therefore, the objectives are (1) to identify the level of closeness of work engagement that affects drivers' intentions to run gamification-based e-business on online transportation services in Indonesia, (2) to propose a conceptual framework for gamification-based e-business services.

4. Methodology

This study uses a soft systems methodology (SSM) approach where the calculations are conducted using the Multi-Factor Evaluation Process (MFEP).

The informants were the Go-Jek drivers in the Central Java region, consisting of 150 people as samples.

In determining the criteria indicators and alternatives for assessing the strength of work engagement, the octalysis framework and work engagement consisting of eight and three criteria are used.

Tables 4.1 and 4.2 describe the criteria and classification of indicators used as calculation data with MFEP.

Table 4.1 Indicator Criteria Based on Octalysis

CODE	INDICATOR
OF1	MEANING
OF2	EMPOWERMENT
OF3	SOCIAL INFLUENCE
OF4	UNPREDICTABILITY
OF5	AVOIDANCE
OF6	SCARCITY
OF7	OWNERSHIP
OF8	ACCOMPLISHMENT

Table 4.2 Level Work Engagement

CODE	ALTERNATIVE
WE1	JOB RESOURCES
WE2	PERSONAL RESOURCES
WE3	JOB DEMAND

The stages used in this research can be seen in Figure 4.1.

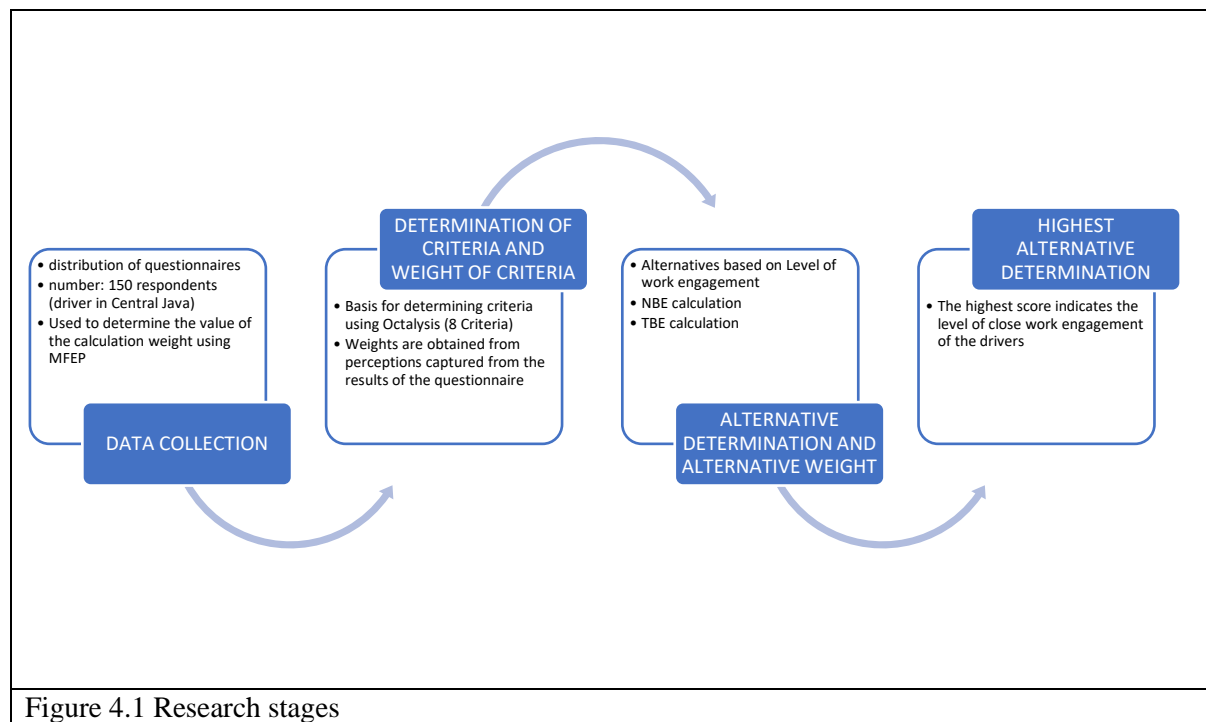


Figure 4.1 Research stages

5. Result and Discussion

Following the questionnaire distributed to 150 respondents, only 100 data can be used because all the components of the questions have been answered. Under the research steps described in the methodology section, the gamification of work criteria indicators uses octalysis to obtain the average indicator results as shown in table 5.1.

Table 5.1 Octalysis Indicator Weight (NBF)

CODE	INDICATOR	BOBOT
O1	MEANING	0.2
O2	EMPOWERMENT	0.1
O3	SOCIAL INFLUENCE	0.2
O4	UNPREDICTABILITY	0.05
O5	AVOIDANCE	0.1
O6	SCARCITY	0.05
O7	OWNERSHIP	0.1
O8	ACCOMPLISHMENT	0.2
TOTAL		1

According to Table 5.1, which was compiled by tallying the opinions of 100 respondents, drivers believe that working with the notion of gamification is motivated by motivation. First,

the majority of drivers believe that these three factors receive the highest scores. They have a sense of purpose, usefulness for themselves and their families, encouragement from social environment, and a desire for accomplishment, reward, and increased money.

Second, empowerment, avoidance and ownership obtain 0.1 points which show that drivers are motivated to join as partners. This is because they can determine their working time and potential bonuses obtained with target consumers and types of services which can also be determined. In addition, the pandemic condition that attacks the community for up to 2 years has resulted in drivers relying on life to work as partners. Therefore, the sense of having a job and not wanting to lose their opportunities are the driving factors for partnership.

Third, unpredictable and scarcity obtain an average of 0.05 as the lowest indicator because of the desire to rank up. The habit of earning a living is more significant than receiving an increase in compensation.

Furthermore, 100 respondents were asked how close the drivers are with online transportation service providers as their partners. Questions are directed at three possible levels, namely 1)

job resources (WE1), (2) personal resources (WE2) and (3) job demand (WE3). The range of values is 1 to 5, averaged from 100 respondents, where 1, 2, 3, 4, and 5 denote very low, low, adequate, high, and very high. The results after processing the average data are shown in table 5.2.

Table 5.2 Factor Evaluation Value (NEF) (Nilai Evaluasi Faktor)

	WE1	WE2	WE3
OF1	4	4	4.52
OF2	3	4.52	4
OF3	4.33	4.48	3
OF4	3	3	3
OF5	4	4.46	3
OF6	4.38	3	3
OF7	4	4	4.38

OF8	3	4.3	3
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The NEF table shows the distribution of drivers' motivation which describes the level of closeness as partners in online transportation service providers. For the 100 drivers, the motivation for feeling meaningful and useful was based on trust in service provider managers or Go-Jek management (WE1) of 4 (high) as high as personal confidence (WE2) in their abilities. The capital of the vehicle evidences this and the cell phone owned. In contrast, the highest average level of closeness is on Job Demand (WE3) because of the desire to obtain a job and income.

Based on Table 5.2 as NEF, the next step is calculating the Total TBE Evaluation Weight by analyzing the NBE for each alternative (WE1, 2 and 3).

TABLE 5.3 NBE JOB RESOURCES

INDICATOR	NBF	NEF	NBE
MEANING	0.2	4	0.8
EMPOWERMENT	0.1	3	0.3
SOCIAL INFLUENCE	0.2	4.33	0.866
UNPREDICTABILITY	0.05	3	0.15
AVOIDANCE	0.1	4	0.4
SCARCITY	0.05	4.38	0.219
OWNERSHIP	0.1	4	0.4
ACCOMPLISHMENT	0.2	3	0.6
TOTAL NBE WE1			3.735

TABLE 5.4 NBE PERSONAL RESOURCES

INDICATOR	NBF	NEF	NBE
MEANING	0.2	4.52	0.904
EMPOWERMENT	0.1	4	0.4
SOCIAL INFLUENCE	0.2	3	0.6
UNPREDICTABILITY	0.05	3	0.15
AVOIDANCE	0.1	3	0.3
SCARCITY	0.05	3	0.15
OWNERSHIP	0.1	4.38	0.438
ACCOMPLISHMENT	0.2	3	0.6
TOTAL NBE WE2			3.542

TABLE 5.5 NBE JOB DEMAND

INDICATOR	NBF	NEF	NBE
MEANING	0.2	4	0.8
EMPOWERMENT	0.1	4.52	0.452
SOCIAL INFLUENCE	0.2	4.48	0.896
UNPREDICTABILITY	0.05	3	0.15
AVOIDANCE	0.1	4.46	0.446
SCARCITY	0.05	3	0.15
OWNERSHIP	0.1	4	0.4
ACCOMPLISHMENT	0.2	4.3	0.86
TOTAL NBE WE3			4.154

Based on Tables 5.3, 5.4 and 5.5 when ranking, the highest scores are (1) Job Demand (4.125), (2) Job Resources (3.735) and (3) Personal Resources (3.542).

This is the final result of TBE (Total Bobor Evaluation), which shows that drivers are motivated to be involved and conduct their work as drivers with a gamification-based work concept due to the highest motivation of Job Demand. Specifically, welfare encourages drivers to be bound and engage as partners for Go-Jek due to work demands. Therefore, the implemented work concept, such as gamification of work, is well accepted up to this point.

The second is the closeness caused by job resources, closely related to performance feedback, supervisory coaching, organizational climate, incentives, independence, and the opportunity to get higher rewards. The lowest level of work engagement is personal resources. It shows that self-resilience, skills and self-capacity in each driver are not the main demands, as a form of awareness that the priority of the drivers is to earn adequate income for their survival through an organization worthy of trust. The octalysis framework concept can be used by convincing workers that the currently partnering organization can answer their needs.

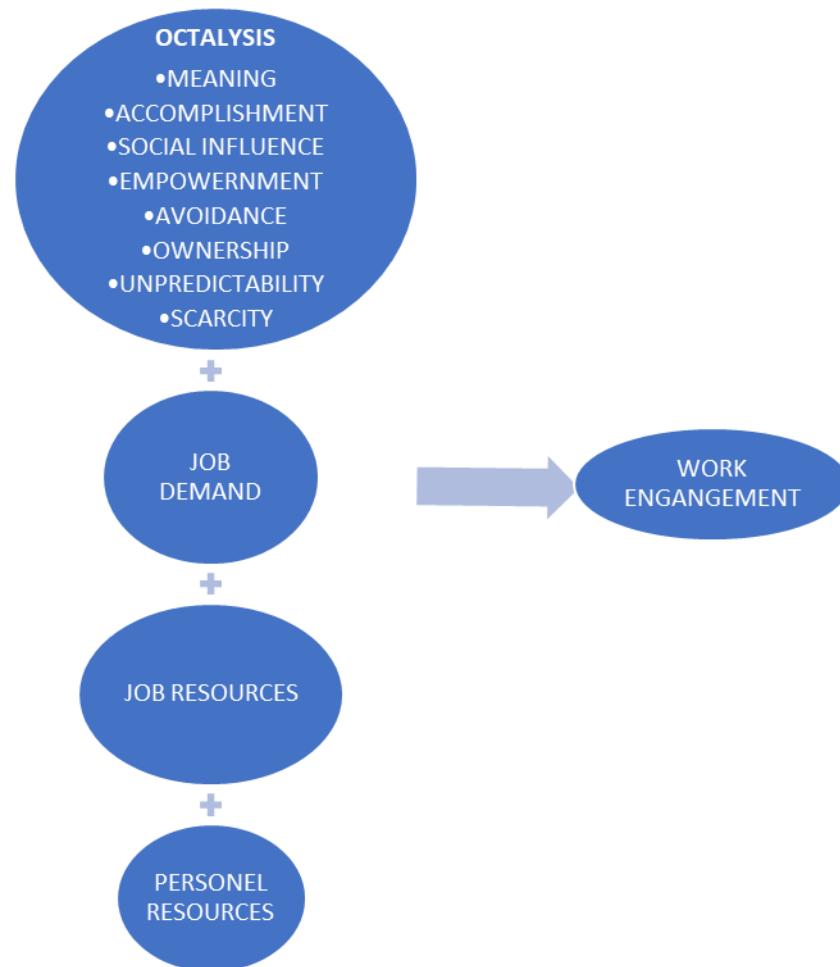


Figure 5.1 Octalysis-Based Work Engagement Model

6. Conclusion

The purpose of this research has been achieved, namely the close level of work engagement between drivers and online service providers working with the concept of gamification. Motivation factors for accomplishment and social influence are the highest, followed by empowerment, avoidance, and ownership. In contrast, other supporting factors are unpredictable and scarcity.

By conducting calculations using MFEP, the closeness of workers is at the level of job demand without reducing the meaning of Job and Personnel Resources. This finding was measured using the Soft System Methodology approach with the MFEP method by processing 100 respondents' data.

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