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Hepsini rahmet ve saygı ile anıyoruz.

Scientific Journal of Innovation and Social Sciences Research, June 2023, is dedicated to our people who lost their lives in the earthquake that took place on February 6, 2023.

We remember them all with respect.

Scientific Journal of Finance and Financial Law Studies Dergisi, Bilimsel Hakemli Dergidir. Bu esere ilişkin olarak Fikir ve Sanat Eserleri Kanunu'ndan doğan haklar saklıdır. Burada yer alan makalelerde ileri sürülen görüşler yazarlarına aittir. Yayın Kurulu, makalelerde ileri sürülen görüşlerden dolayı herhangi bir sorumluluk üstlenmemektedir

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**THE ROLE OF PSYCHOLOGICAL RESILIENCE IN STRENGTHENING
ORGANIZATIONAL COMMITMENT FROM THE PERSPECTIVE OF HUMAN
RESOURCE MANAGEMENT: THE IMPORTANCE OF PSYCHOLOGICAL WELL-
BEING**

Gamze GÜNER KİBAROĞLU ¹

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Abstract

This study was conducted to examine the role of psychological well-being in the effect of psychological resilience on organizational commitment from the perspective of human resource management. In this context, the study, which is based on the Theory of Conservation of Resources, was carried out with the data collected by questionnaire method from 212 participants working in the security department in the production sector. According to the findings, psychological resilience has a significant effect on organizational commitment in the same direction. Psychological well-being plays a regulatory role in this effect. The findings obtained in the study provide important outputs for businesses and managers.

Keywords: Psychological Resilience, Organizational Commitment, Psychological Well-Being, Human Resource Management, Conservation Theory of Resources

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INTRODUCTION

In the business world, the psychological well-being of employees and their organizational commitment are of paramount importance for the success and sustainability of organizations. Human resource management aims to support and enhance employees' psychological well-being, performance, and organizational commitment by developing strategies and initiatives (Avey, Luthans & Jensen, 2009; Hartmann, Weiss, Hoegl&Carmeli, 2021; Saks, 2011). Within this context, the roles of psychological resilience and psychological well-being have come to the forefront (Bakker & Schaufeli, 2008; Zhai, Zhu & Zhang, 2022).

Psychological resilience can be defined as an individual's ability to cope with stress, pressure, and challenges. In the realm of work, psychological resilience is crucial for employees to effectively navigate demanding work conditions, adapt to change, and consistently perform (Fisher, Ragsdale & Fisher, 2019). In this regard, human resource management has numerous opportunities to implement strategies that support and enhance psychological resilience (Athota, Budhwar& Malik, 2020; Avey et al., 2009). In addition to psychological resilience, psychological well-being is also an effective factor in employees' job performance and organizational commitment. Psychological well-being refers to the emotional, mental, and social well-being of individuals. Factors such as employees' feeling good about themselves, high motivation, coping with work stress, and increasing job satisfaction contribute to the strengthening of organizational commitment (Cooper, Wang, Bartram & Cooke, 2019). At this point, human resource management can implement various policies and programs to encourage and support employees' psychological well-being. Furthermore, psychological well-being is a significant factor influencing employees' job performance and organizational commitment (Wright, Cropanzano, Bonett& Diamond, 2009). Psychological well-being encompasses individuals' emotional, mental, and social welfare. Factors such as feeling good about oneself, high motivation, effective stress management, and increased job satisfaction contribute to strengthening organizational commitment (Bakker & Schaufeli, 2008). Human resource management can implement policies and programs to promote and support employees' psychological well-being (Salanova, Llorens, Cifre& Martinez, 2012).

This study aims to examine the role of psychological resilience in organizational commitment from a human resource management perspective. In this context, firstly, the extent and effect of psychological resilience on organizational commitment is examined. Then, the predictive power of psychological well-being was examined. The study emphasizes the importance of psychological resilience and psychological well-being in order to increase the level of organizational commitment of employees.

1. Literature Review

Organizational Commitment

Organizational commitment refers to the level of loyalty and commitment of an employee to an organization, to work, and to the goals of the organization (Meyer & Allen, 1997). This concept can be defined as the employee's loyalty to the organization, passionate commitment to work, and belief in the values of the organization. Therefore, organizational commitment can encourage employees to make more effort within the organization, to adopt the goals and objectives of the organization, and to maintain a long-term business relationship (Mowday, Porter & Steers, 1982). In this framework, the employee's commitment to the organization may include an emotional attachment to the job and the organization,

aligning individual values with the values of the organization, and belief in the future of the organization.

The Conservation Theory of Resources provides an important theoretical framework to explain the concept of organizational commitment. This theory suggests that employees accumulate energy, time, skills, and other resources and try to conserve these resources (Hobfoll, 1989). According to this theory, employees have certain resources to cope with the demands they face in the work environment. These resources may include physical, mental, and social resources. For example, a supportive work environment, competencies, time management skills, and social support are resources that employees can use to cope with these demands. According to the Conservation Theory of Resources employees' resources are limited and they tend to protect these resources (Halbesleben, Neveu, Paustian-Underdahl & Westman, 2014). An employee's organizational commitment depends on the resources that the organization can offer to the employee. If the employee receives sufficient resources from the organization, they can protect their resources and their level of commitment can be high. This theory shows that when employees are supported by the resources provided by the organization, their commitment to work and the organization will increase. Therefore, the organization should develop policies and practices to ensure that employees have access to resources and support them to protect these resources. In this way, employees' organizational commitment can be increased and their performance can be improved.

Organizational commitment can increase the satisfaction level of employees, increase their motivation and positively affect job performance (Meyer, Becker & Vandenberghe, 2004). In addition, committed employees generally work with a higher sense of job security, quit less often, and are able to put more effort into achieving the organization's goals (Meyer & Herscovitch, 2001). In this case, since there is a positive relationship between organizational commitment, employee commitment to work, and the success of the organization, companies often develop policies and strategies to increase the level of employee commitment (Riketta, 2008). Starting from the recruitment process, human resources management practices such as training, support, and reward are effective tools used to support employees' organizational commitment (Allen & Meyer, 1996). In this context, there are many factors affecting organizational commitment. However, it is thought that the employee's perception of psychological resilience is important among these factors.

Psychological Resilience

Psychological resilience is defined as the internal strength and flexibility ability of individuals to cope with negative conditions such as stress, trauma, pressure, difficulties, and change (Masten, 2014). This concept refers to individuals' resilience, initiating recovery processes, and adapting in a positive way when faced with negative events. The basic elements of psychological resilience include emotional, mental, and social resilience (Rutter, 2012). This resilience includes coping with stress effectively, maintaining emotional balance, and handling events with a positive perspective. Research shows that individuals with high psychological resilience can cope with obstacles more effectively, recover quickly, and are more flexible.

The Conservation Theory of Resources may explain the concept of psychological resilience. According to this theory, individual effort to resist environmental stressors and conserve their resources (Hobfoll, 1989; Hobfoll, Johnson, Ennis, & Jackson, 2003). This theory is associated with psychological resilience, protection, and reacquisition of resources (Halbesleben, Harvey & Bolino, 2010; Hobfoll,

1989; Hobfoll et al., 2003). According to theory, it states that individuals have limited resources and they tend to conserve these resources. Resources may include various elements such as material and immaterial resources, social support, skills, and environmental factors. Individuals can develop strategies to protect, renew and effectively use these resources. While individuals use various methods to protect their resources, they use their resources effectively to cope with threats to these resources and try to regain them.

In addition to genetic factors, environmental factors, learning experiences, and personal development play an important role in crafting psychological resilience (Southwick, Bonanno, Masten, Panter-Brick & Yehuda, 2014). Individuals can strengthen their resilience through strategies such as emotional awareness, positive thought patterns, effective problem-solving skills, and the use of social support networks. Psychological resilience plays an important role in coping with stress factors in personal and professional life, increasing job performance, job satisfaction, and health. However, the concept of psychological well-being may be an important variable in the effect of psychological resilience on organizational commitment. Psychological resilience refers to the ability of individuals to cope with difficulties and combat stress (Luthans, 2002). Organizational commitment, on the other hand, is an employee's commitment, loyalty, and satisfaction with the organization (Meyer & Allen, 1991). In this framework, psychological resilience can show the ability of individuals to display a positive attitude, show flexibility and use their adaptation skills when faced with difficulties and stress factors (Maddi, 2006). This may reduce the level of employees' coping with the difficulties they face at work and being affected by negative situations. Therefore, organizational commitment is related to employees' adoption of the organization, their commitment to their jobs, and their support for the goals of the organization (Meyer & Allen, 1991). Individuals with high psychological resilience may be more resilient in the face of negative situations and may have a more positive work experience. This may contribute to an increase in organizational commitment. For example, a study found that employees with high psychological resilience exhibit higher levels of job commitment, organizational loyalty, and satisfaction (Luthans, Avolio, Avey, & Norman, 2007). This study showed that employees with high psychological resilience exhibit more positive attitudes and are more committed to their jobs even in stressful working environments. In light of these findings, the first hypothesis of the study was formed by considering that psychological resilience has a significant effect on organizational commitment: *H1: Psychological resilience has a significant effect on organizational commitment in the same direction*

Psychological well-being

Psychological well-being refers to individuals being in a healthy and satisfying state emotionally, mentally, and socially. This concept includes elements such as the positive emotional state of the individual, self-acceptance, personal development, establishing positive relationships, finding meaning and purpose, and having self-confidence. In other words, the concept of psychological well-being can be associated with the positive emotional state of individuals, the development of personal abilities, the establishment of meaningful social relationships, and life serving a meaningful purpose. In addition, psychological well-being can be seen as a concept consisting of four basic components: positive emotional state, life satisfaction, subjective well-being, and meaningful life experience (Keyes, 2002; Diener, 2009).

The concept of psychological well-being is based on the Conservation Theory of Resources. According to this theory, it emphasises people's need for resources and their efforts to protect and regain these

resources. In this theory, individuals' access to resources and their ability to protect these resources can affect their psychological well-being. (Hobfoll, 1989). The Conservation Theory of Resources can link this situation to the interaction with resources. In this case, employees can increase their psychological well-being through their efforts to protect and regain their resources.

Psychological well-being is a condition that affects an individual's overall quality of life and satisfaction (Ryff & Keyes, 1995). The positive emotional state of individuals is associated with experiencing positive emotions such as feelings of happiness, joy, peace, and pleasure. In addition, elements such as self-acceptance and self-worth, personal development and growth, self-confidence, establishing positive social relationships, and finding meaningful goals can also be considered as a part of psychological well-being. This concept can increase an individual's ability to cope with stress, protect mental health, increase life satisfaction, and generally be an indicator of a healthy lifestyle (Ryff & Singer, 2008; Diener, 2012). Therefore, promoting and supporting psychological well-being is important for individuals to lead a healthy life and realize their potential.

The moderation effect of psychological well-being can explain the relationship between psychological well-being, psychological resilience, and organizational commitment. While psychological resilience refers to the ability and flexibility of individuals to cope with stress, organizational commitment is the commitment, loyalty, and satisfaction of an employee to the organization. In this context, it is suggested that psychological well-being can affect the relationship between psychological resilience and organizational commitment as a moderator. Because employees with high psychological resilience have higher levels of psychological well-being and this may have a positive effect on organizational commitment (Avey, Luthans, & Youssef, 2010). In addition, psychological well-being may have a stronger effect on organizational commitment in individuals with high psychological resilience (Luthans et al., 2007). In other words, individuals with high psychological resilience may have higher levels of psychological well-being. The presence of this psychological well-being may change its power and direction on organizational commitment. Therefore, psychological well-being may play a moderating role in the relationship between psychological resilience and organizational commitment. In the light of this information, the second hypothesis of the study was formed. *H2: Psychological well-being has a moderating role in the effect of psychological resilience on organizational commitment.*

As a result of the literature review, all hypotheses of the study based on theoretical reasons are shown in the research model (Figure 1).

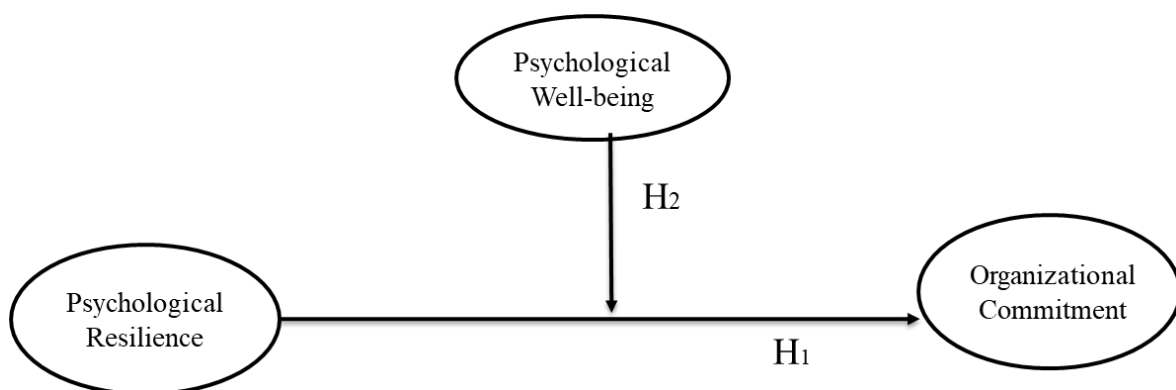


Figure 1. Research Model

2. Research Methodology

Study Design and Data Collection

This study was conducted on employees working as security guards in enterprises operating in the field of production. Within the scope of the study, questionnaires were sent to 400 participants between 01.03.2023 - 01.05.2023 and 212 participants were returned. When it is known that the number of the universe of the scope of the study is determined by the number of security guards working in the production sector in Eskişehir (About 4.000), it is seen that the number of samples is sufficient (Özdamar, 2003). The quantitative method was adopted and the convenience sampling method design was selected.

Of the participants obtained in the study, 32% are female and 68% are male. 9% of the participants are primary school/middle school graduates, 61% are high school graduates, 18% are vocational high school graduates and 12% are undergraduate graduates. In addition, it was observed that the participants are mostly between the ages of 30-45, married, and had 2-6 years of experience.

Internal consistency, validity, effect analyses, and moderator effect analysis of the study were conducted in the Smart PLS 4 program. In addition, frequency analysis for the demographic variables of the participants and correlation analyses for the relationship between the scales were performed in SPSS 26 package program.

Scales Used in the Study

Psychological Resilience Scale: The short psychological resilience scale developed by Smith et al. (2008) and translated into the national culture by BasımandÇetin (2011) was used. The scale that short form contains 6 items, is evaluated in a 5' Likert structure (1=Strongly disagree, 5=1=Strongly agree). High scores obtained from the scale indicate high psychological resilience.

Organizational Commitment Scale: The 18-item organizational commitment scale developed by Meyer and Allen (1991) and adapted into Turkish by Wasti (1999, 2003) was used. This scale was handled as a 5' Likert structure.

Psychological Well-Being Scale: The one-dimensional and 8-item scale developed by Diener et al. (2009) and adapted into Turkish by Telef (2013) was used. This scale was handled as a 5' Likert structure.

Descriptive Statistics

The validity and internal consistency analyses of the psychological resilience, organizational commitment, and psychological well-being scales used in this study were conducted. As a result of this analysis, it was seen that the values indicating internal consistency (Cronbach's alpha $\geq 70\%$; factor loadings $\geq 40\%$; data consistency $\geq 70\%$; convergent validity $\geq 70\%$) were at acceptable levels (Fornell&Larcker, 1981; Hair, Hult, Ringle&Sarsedt, 2017). However, it was observed that the average variance coefficient explained (AVE) by the items of the continuance commitment scale, which is the

sub-dimension of organizational commitment, was below 50% (Henseler, Ringle&Sarstedt, 2015). For this reason, one item of this scale was removed from the scale and the AVE value coefficient reached the desired level. In addition, for the validity coefficients of the scales, model fit values (multicollinearity coefficient <5; good fit value <0.08; the difference between the correlation coefficients of the model, good fit model, and experimental correlation coefficients are insignificant and normed fit index $\geq 90\%$) were found to be appropriate. These values were observed to be at acceptable levels by the literature (Dijkstra & Henseler, 2015; Hair et al., 2017) (Table 1).

Table 1. Validity and Reliability Analysis Results of the Scales

Variables		C.A	rho_a	CR (rho_c)	AVE	VIF	SRMR	d_ULS	d_G	NFI
Organizational Commitment	Affective Commitment	.769	.790	.781	.507	1.213-3.718	.0671	1.723 p>0.05	.989 p>0.05	.903
	Continuance Commitment	.771	.833	.766	.521	1.516-2.678				
	Normative Commitment	.811	.820	.795	.507	1.071-3.912				
Psychological Resilience		.779	.786	.780	.504	1.599-3.219				
Psychological Well-being		.906	.908	.907	.549	1.714-2.545				

Following the results of internal consistency and validity analyses, it was analysed whether the scales used in the study were well differentiated from other factors. In addition to this analysis, the relationships between psychological resilience, organizational commitment, and psychological well-being scales were also examined. As a result of this analysis, it was seen that these three scales were related to each other in the same direction and analytically (Cohen, 1988). It also when the correlation coefficients and AVE square root coefficients of psychological resilience, psychological well-being, and organizational commitment scales were compared, it was seen that these variables were well separated from other variables (Fornell&Larcker, 1981) (Table 2).

Table 2. Correlation and Discriminant Validity Results

Variables	(1)	(2)	(3)	(4)	(5)	
Organizational Commitment	Affective Commitment	(.712)	.452**	.369**	.542**	.435**
	Continuance Commitment		(.721)	.247**	.410**	.466**
	Normative Commitment			(.712)	.539**	.328**
Psychological Resilience				(.709)	.660**	
Psychological Well-being					(.740)	

** Correlation Relationship p<0,05, Values in brackets represent AVE square root.

3. Results

In order to analyze the hypotheses formed within the framework of the study, firstly the coefficients of the research model were examined. When we look at the R² values obtained as a result of this analysis, it is seen that psychological resilience explains 32.1% of affective commitment, 31.3% of continuance commitment, and 36.6% of normative commitment. The effect size value (f²) shows that psychological resilience has a moderate effect on affective commitment, continuance commitment, and normative commitment. Also in Table 3, it is seen that psychological resilience has a moderate effect on

psychological well-being. In addition, when the predictive power coefficients (Q^2) are examined, it is seen that all sub-dimensions of psychological resilience and organizational commitment have predictive power (Hair et al., 2017).

Table 3. Research Model Coefficients

Variables	R ²	f ²					Q ²
		Affective Commitment	Continuance Commitment	Normative Commitment	Psychological Resilience	Psychological Well-being	
AffectiveCommitment	.321						.412
ContinuanceCommitment	.313						.316
NormativeCommitment	.366						.215
Psychological Resilience		.108	.117	.112	.178		.105
Psychological well-being	.412						

Model effect coefficients were analysed for the analysis of the two main hypotheses of the study. As a result of the analyses for the first hypothesis of the study, the effect of psychological resilience on organizational commitment was analysed. As a result of this analysis, it was seen that psychological resilience had a significant effect on organizational commitment in the same direction ($\beta=.852$; $\beta=.115$; $\beta=1.164$, $p<0.05$). This result supports the H1 hypothesis of the study. In other words, as psychological resilience increases, organizational commitment increases. Likewise, as psychological resilience decreases, organizational commitment decreases. Again, the second hypothesis formed within the scope of the study, i.e. moderating effect analysis was performed. In this analysis, the moderating role of psychological well-being in the relationship between these two variables in the effect of psychological resilience on organizational commitment was analysed. As a result of the analysis, it was seen that psychological well-being had a moderating effect between these two variables ($\beta_1=.014$; $\beta_2=.006$; $\beta_3=.020$, $p<0,01$). This result shows that the H2 hypothesis of the study is supported. In other words, psychological well-being has a moderating effect on the effect of psychological resilience on organizational commitment. When the strength of this effect is examined, it is seen that psychological well-being reduces the strength of the relationship between psychological resilience and organizational commitment. In other words, the level of psychological well-being of employees decreases the strength of the relationship between psychological resilience and organizational commitment (Table 4).

Table 4. Research Model Effect Coefficients

Model	β	T Statistics	P Values
Psychological Resilience-> Affective Commitment	.852	6.752	.002
Psychological Resilience-> Continuance Commitment	.115	2.312	.001
Psychological Resilience-> Normative Commitment	1.164	9.781	.000
Moderation Effect 1 Psychological Well-being	.014	1.233	.001
Moderation Effect 2 Psychological Well-being	.006	1.114	.002
Moderation Effect 3 Psychological Well-being	.020	1.812	.010

The findings obtained as a result of all analyses are shown as a result of structural factor analysis (Figure 2).

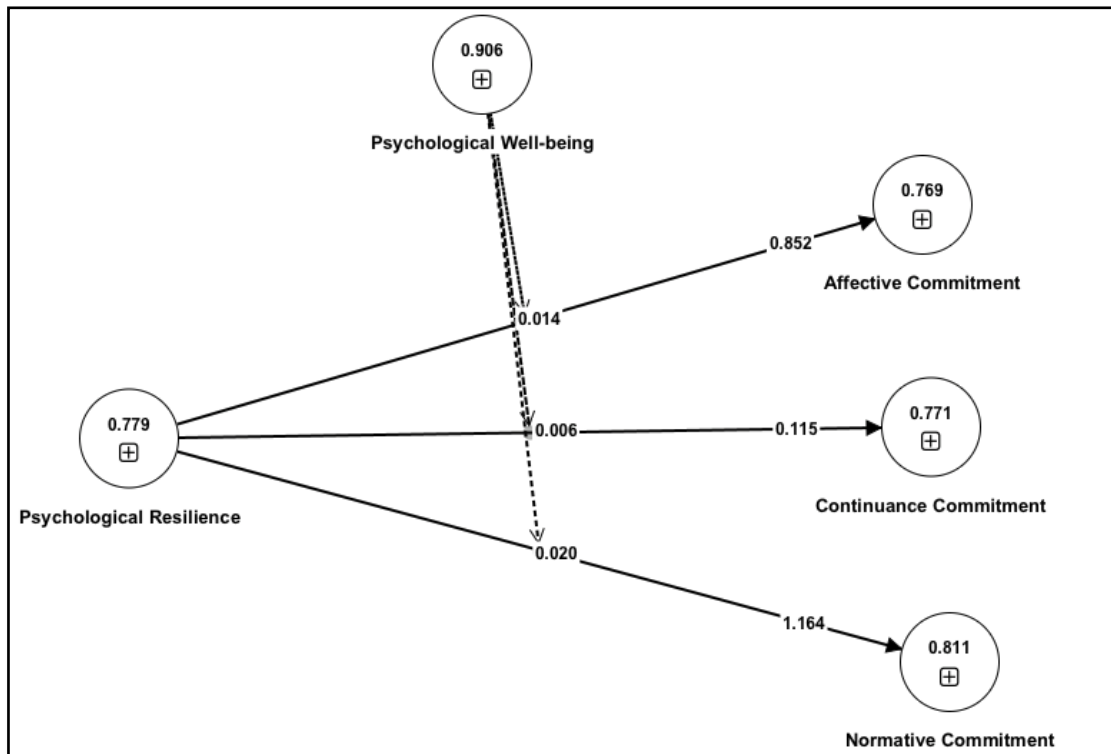


Figure 2. Structural Factor Analysis Results of the Study

4. DISCUSSION and CONCLUSION

Main Findings of the Study

This study was conducted to examine the role of psychological well-being in the effect of psychological resilience on organizational commitment. According to the results of the study, there is a significant relationship between psychological resilience and organizational commitment in the same direction. In other words, as employees' psychological resilience increases, their level of organizational commitment also increases. This result is also supported by studies in the literature (Luthans et al., 2007; Tugade & Fredrickson, 2004). However, unlike the studies in the literature, when this study considers the sample of security employees, the psychological resilience of these unit employees was examined separately in terms of normative, affective, and continuance commitment. In this context, it has been shown that increasing the psychological levels of security employees can also increase their levels of continuance commitment. In addition, the results of the study showed that psychological well-being has a moderating effect between psychological resilience and organizational commitment. This result was indirectly supported by some studies in the literature (Avolio, Reichard, Hannah, Walumbwa & Chan, 2007; Avey et al., 2010; Avey, Wernsing & Luthans, 2008).

Theoretical Findings

This study explains the moderating effect of psychological well-being on the effect of psychological resilience on organizational commitment in the context of the Conservation Theory of Resources. According to the theory, individuals make efforts to protect and increase their resources (Hobfoll, 2001). Psychological resilience is defined as an individual's ability to cope with stressful situations (Masten, 2001). Having a high level of psychological resilience can enable an individual to cope with stressful

situations more effectively and protect their resources. On the other hand, psychological well-being refers to an individual's emotional, psychological, and social well-being (Ryff, 1989). Psychological well-being emerges as an important factor in the process of protecting and increasing an individual's resources. Individuals with high levels of psychological well-being can use and conserve resources more effectively (Diener, Emmons, Larsen & Griffin 2010).

In this context, the Conservation Theory of Resources helps us to understand the impact of these factors on organizational commitment by explaining the relationship between psychological resilience and psychological well-being. Individuals with high levels of psychological resilience and psychological well-being are able to use and conserve their resources more effectively. This may lead them to have a higher level of commitment (Bakker, Demerouti & Sanz-Vergel, 2014).

Research Practical Implications

The moderating effect of psychological well-being on the effect of psychological resilience on organizational commitment provides various benefits to businesses. Employees with high levels of psychological well-being generally have a higher level of commitment. This can help organizations to improve their performance by increasing employee engagement, motivation, and loyalty. At the same time, the moderating effect of psychological well-being can reduce employee turnover intention and thus contribute to organizations maintaining a stable workforce. Psychological well-being can increase employees' ability to cope with stress while at the same time making them more productive at work. This helps organizations to increase the efficiency of their business processes. Moreover, the moderating effect of psychological well-being can reduce employees' levels of job stress and burnout. This can make employees feel happier, healthier, and more motivated at work. Taken together, the moderating effect of psychological well-being in the impact of psychological resilience on organizational commitment provides significant benefits in various areas such as increasing employee commitment, reducing turnover rates, improving work productivity, and increasing employee health and happiness.

Research Limitations and Future Research Directions

This study has certain limitations due to the characteristics of the participants, the sincerity of their answers, and the fact that it was applied in a single culture. In addition, the fact that a detailed interview was not conducted in the study can also be seen among the limitations of the study. Therefore, these limitations should be taken into consideration in the generalization of the results of the study.

REFERENCES

- Allen, N. J. & Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. *Journal of Vocational Behavior*, 49(3), 252-276.
- Athota, V.S., Budhwar, P. & Malik, A. (2020). Influence of personality traits and moral values on employee well-being, resilience and performance: A cross-national study. *Applied Psychology*, 69(3), 653-685
- Avey, J. B., Luthans, F. & Jensen, S. M. (2009). Psychological capital: A positive resource for combating employee stress and turnover. *Human Resource Management*, 48(5), 677-693.

- Avey, J. B., Luthans, F. & Youssef, C. M. (2010). The additive value of positive psychological capital in predicting work attitudes and behaviors. *Journal of Management*, 36(2), 430-452.
- Avey, J. B., Wernsing, T. S. & Luthans, F. (2008). Can positive employees help positive organizational change? Impact of psychological capital and emotions on relevant attitudes and behaviors. *The Journal of Applied Behavioral Science*, 44(1), 48-70.
- Avolio, B. J., Reichard, R. J., Hannah, S. T., Walumbwa, F. O. & Chan, A. (2007). Meta-analytic review of leader-member exchange theory: Correlates and construct issues. *Journal of Applied Psychology*, 92(3), 698-714.
- Bakker, A. B. & Schaufeli, W. B. (2008). Positive organizational behavior: Engaged employees in flourishing organizations. *Journal of Organizational Behavior*, 29(2), 147-154.
- Bakker, A. B., Demerouti, E. & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD-R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, 389-411.
- Basım, H. N. & Çetin, F. (2011). Yetişkinler için psikolojik dayanıklılık ölçeği'nin güvenilirlik ve geçerlilik çalışması. *Türk Psikiyatri Dergisi*, 22 (2), 104-114.
- Cohen, J. (1988). *Statistical power analysis for the behavioral Sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Cooper, B., Wang, J., Bartram, T. & Cooke, F.L (2019). Well-being-oriented human resource management practices and employee performance in the Chinese banking sector: The role of social climate and resilience. *Human Resource Management*, 58(1), 85-97.
- Diener, E. (2009). Subjective well-being. In E. Diener (Ed.), *The science of well-being* (pp. 11-58). Springer Netherlands.
- Diener, E. (2012). New findings and future directions for subjective well-being research. *American Psychologist*, 67(8), 590-597.
- Diener, E., Emmons, R. A., Larsen, R. J. & Griffin, S. (2010). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71-75.
- Dijkstra, T.K. & Henseler, J. (2015). Consistent partial least squares path modeling. *MIS Quarterly*, 39(2), 297-316
- Fisher, D.M., Ragsdale, J.M. & Fisher, E.C.S. (2019). The Importance of Definitional and Temporal Issues in the Study of Resilience. *Applied Psychology*, 68(4), 583-620.

- Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Hair, J.F., Hult, G.T.M., Ringle, C.M. & Sarstedt, M. (2017), *Primer on partial least square structural equations modeling (PLS-SEM)*, (2nd Ed.), Sage, Thousand Oaks.
- Halbesleben, J. R., Harvey, J. & Bolino, M. C. (2010). Too engaged? A conservation of resources view of the relationship between work engagement and work interference with family. *Journal of Applied Psychology*, 95(5), 1003-1026.
- Halbesleben, J. R., Neveu, J. P., Paustian-Underdahl, S. C. & Westman, M. (2014). Getting to the “COR”: Understanding the role of resources in conservation of resources theory. *Journal of Management*, 40(5), 1334-1364.
- Hartmann, S., Weiss, M., Hoegl, M. & Carmeli, A. (2021). How does an emotional culture of joy cultivate team resilience? A sociocognitive perspective. *Journal of Organizational Behavior*, 42(3), 313-331.
- Henseler, J., Ringle, C.M. & Sarstedt, M. (2015), A new criterion for assessing discriminant validity in variance-based structural equation modelling. *Journal of the Academy of Marketing Science*, 43(1), 115-135
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513-524.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review*, 50(3), 337-421
- Hobfoll, S. E., Johnson, R. J., Ennis, N. & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology*, 84(3), 632-643.
- Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207-222.
- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior*, 23(6), 695-706.
- Luthans, F., Avolio, B. J., Avey, J. B. & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, 60(3), 541-572.
- Maddi, S. R. (2006). Hardiness: The courage to grow from stresses. *Journal of Positive Psychology*, 1(3), 160-168.

- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, 56(3), 227-238.
- Masten, A. S. (2014). Global perspectives on resilience in children and youth. *Child Development*, 85(1), 6-20.
- Meyer, J. P. & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61-89.
- Meyer, J. P. & Allen, N. J. (1997). *Commitment in the workplace: Theory, research, and application*. Sage Publications.
- Meyer, J. P., Becker, T. E. & Vandenberghe, C. (2004). Employee commitment and motivation: A conceptual analysis and integrative model. *Journal of Applied Psychology*, 89(6), 991-1007.
- Meyer, J. P. & Herscovitch, L. (2001). Commitment in the workplace: Toward a general model. *Human Resource Management Review*, 11(3), 299-326.
- Mowday, R. T., Porter, L. W. & Steers, R. M. (1982). *Employee-organization linkages: The psychology of commitment, absenteeism, and turnover*. Academic Press, New York.
- Özdamar, K. (2003). *Modern bilimsel araştırma yöntemleri*. Eskişehir: Kaan Kitapevi.
- Ricketta, M. (2008). The causal relation between job attitudes and performance: A meta-analysis of panel studies. *Journal of Applied Psychology*, 93(2), 472-481.
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, 24(2), 335-344.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069-1081.
- Ryff, C. D. & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719-727.
- Ryff, C. D. & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies*, 9(1), 13-39.
- Salanova, M., Llorens, S., Cifre, E. & Martinez, I. M. (2012). We need a hero! Toward a validation of the healthy and resilient organization (HERO) model. *Group & Organization Management*, 37(6), 785-822.
- Saks, A. M. (2011). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 13

26(7-8), 600-619.

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P. & Jennifer Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15, 194–200.

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C. & Yehuda, R. (2014). Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology*, 5(1), 25338.

Telef, B.B. (2013). Psikolojik iyileşme ölçeği: Türkçeye uyarlama, geçerlik ve güvenirlik çalışması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 28(3), 374-384.

Tugade, M. M. & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, 86(2), 320-333.

Wasti, S.A. (1999). Organizational commitment and collectivism: The case of Turkey (Yayınlanmamış Doktora Tezi). University of Illinois, Urbana-Champaign.

Wasti, S.A. (2003). Organizational commitment, turnover intentions and the influence of cultural values. *Journal of Occupational and Organizational Psychology*, 76(3), 303- 321.

Wright, T.A., Cropanzano, R., Bonett, D.G. & Diamond, W.J. (2009). The role of employee psychological well-being in cardiovascular health: when the twain shall meet. *Journal of Organizational Behavior*, 30(2), 193-208.

Zhai, Z., Zhu, C.J. & Zhang, M.M (2022). Mapping promoting factors and mechanisms of resilience for performance improvement: The role of strategic human resource management systems and psychological empowerment. *Applied Psychology*, Early View.

A RESEARCH ON THE USE OF THE RENTAL ELECTRIC SCOOTER

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Abstract

Recently, the number of rental electric scooters has been increasing in Türkiye. While the scooter was previously kind of a toy used only by children, it is now used as a means of transport for short distance journeys. It was aimed to obtain more information about the rental scooter, which has become quite fashionable in recent years in this study. In this direction, it is planned to behaviourally analyse the intention of consumers to use rental electric scooters. For this purpose, 307 consumers were reached by using online survey method. The data collected were analysed with SPSS Amos 24 software. Through this research; no definite relationship was found between consumers' performance expectancy, effort expectancy, price value and facilitating conditions and behavioural intention, while a positive relationship was found between social influenceand behavioural intention and perceived risk and behavioural intention.

Keywords: Electric Scooter, Behavioural Intention, Consumer Behaviour

JEL Code: M10, M30, M31

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INTRODUCTION

Two-wheeled vehicles, which entered our lives as a play vehicle for children years ago, have become an electric two-wheeled means of transport today. The scooter rental system, which was first used in America in 2017, is called the shared e-scooter system (Gössling, 2020). After the USA, this system has started to spread rapidly to other countries of the world, including Türkiye, due to factors such as convenience, cheapness, ease and environmental protection. In a study conducted by Boston Consulting Group (BCG) in 2019, it is mentioned that the market share of electric scooter (e-scooter) use will reach 40/50 billion US dollars by 2025 (BCG, 2019).

In the world, the use of two-wheeled, lightweight and small-sized electric vehicles for short-distance transport is called micro mobility (Eccarius & Lu, 2020). It is observed that micro mobility has become more used due to facilitating conditions such as being economical, facilitating transportation, providing the opportunity to move faster, saving time by getting rid of traffic density. The fact that scooters can be easily rented using mobile applications and can be easily found at many points makes their use attractive.

In order to rent an e-scooter, consumers must first have a smart mobile device and an application. Scooter users enter the rental scooter application from their smart mobile devices and see if there is an e-scooter for rent near their current location. After finding a suitable scooter, the scooter is registered with the mobile application and the scooter is started to be used. In addition, these people complete the transaction by paying the travel (distance) fee via the mobile application, and scooter points can be detected by GPS tracking of the payment system usage time and the drop-off point. In addition, if there is no scooter drop-off point where the user ends up using the scooter, the use of the scooter is completed by leaving the scooter in a suitable place.

According to the data of Gemius research company, it was concluded that 4.4 million people visited the scooter applications of only 3 companies between 14 March and 14 April 2022 in Turkey. It was determined that the people using the application are generally in the 25-34 age range (Gemius Turkey, 2022).

In addition to positive opinions, it is necessary to know that there is also a segment that thinks this means of transport is risky. It is obvious that there are negative sides such as the lack of clear rules in traffic, the lack of a separate road they can go in traffic, and the high speed limit. Accordingly, this study aims to measure the relationship between consumers' performance expectancy, effort expectancy, price value, social influence, price value and facilitating conditions and behavioural intentions in order to get more knowledge about the intention to rent an e-scooter.

Although e-scooter rental applications are increasing in the world and in Turkey, situations such as the fact that countries are in the transition stage to this system and its effect is not known exactly, suggests that the contribution of this study to the literature is important. Due to the increasing use of electric scooters day by day and the lack of sufficient studies on this subject in our country, it is a field that needs to be examined academically. Thus, in this study, some uncertainties were tried to be shed light on.

1. Literature Review

Renting electric scooter has become widespread in the world including Türkiye as well. This micro mobility is defined by the International Transport Federation as transport by human-powered electric vehicles with a speed limit of 45 km / h up to 350 kg and, if available, the power supply can be gradually reduced (OECD/ITF, 2020).

While in previous years, children and/or adults used vehicles for hobby and/or sports purposes such as bicycles, in 2017, firstly used in USA (Gössling, 2020; Nacto, 2018). The use of electric scooters for hire in Türkiye started in 2019. Looking at 2022, it is seen that 4.4 million people logged in to the scooter application in a period of only 1 month (Gemius, 2022). In the researches, they think that it is an effective alternative in providing transportation from one place to another for people who do not have a car or do not want or do not use it, who want to easily reach public transportation vehicles, or who do not want to use public transportation (Caspi et al., 2020; Jacques, 2019). In the study conducted by Almannaa et al. in 2021 in Saudi Arabia, it was concluded that people who called a vehicle from mobile applications were more willing to use electric scooters, and people wanted to rent electric scooters from shopping malls or entertainment centres. In addition, regarding the use of electric scooters by the participants; It is seen that they are concerned about the lack of infrastructure, weather and safety problems (Almannaa et al., 2021). They concluded that people in the state of Texas in the USA need a good bicycle path infrastructure for electric scooter application and that students are generally willing to use this application. For this reason, it is thought that it would be appropriate to work on the infrastructure problem of companies and expand the electric scooter application in regions where students live heavily (Caspi et al., 2020). In the study conducted by Nikiforiadis et al. in Greece in 2021, it was concluded that people who use electric scooters prefer this vehicle instead of using public transport or walking. On the other hand, it is seen that people who use bicycles or motorcycles are not willing to use electric scooters. In addition, considering the effect of gender on usage, it is seen that men are more willing to use electric scooters (Nikiforiadis et al., 2021).

The study of consumers in 2021 in Italy focused on the time and place of use of electric scooters. Most people use the electric scooter for short trips, usually in the afternoon on weekdays. In parallel with the literature, the places where it is used in the morning are mostly the places where university students are. It is also seen that it is used in places close to public transportation stations such as trains and subways. In other words, it is possible to say that people benefit from the electric scooter service to gain speed and provide easy access to public transportation (Chicco and Diana, 2022). In the study conducted in 2023 in Australia, Belgium, Czech Republic, Norway, Czech Republic, Norway and Sweden by online survey method, some of the participants said that they violated the rules by travelling on the pedestrian pavement even though they were not allowed to do so. Therefore, it is seen that pedestrians living in four countries other than Australia find electric scooter users annoying. It is also understood that people who do not use electric scooters think that the use of electric scooters is extremely risky (Sucha et al., 2023).

Research in Norway also focused on whether the use of electric scooters could replace public transport. As a result of the study, it was seen that electric scooters and public transportation vehicles were rivals on the one hand and complemented each other on the other. As in the case of Italy (Chicco & Diana, 2022), the majority of people use electric scooters to reach the public transport system (Aarhaug et al., 2023). In another study conducted in 2022 in Lisbon, Portugal, the environmental, social and economic

dimensions of users were evaluated. As a result of the study, although it is accepted that the use of electric scooters is beneficial, it has been seen that safety problems worry users. It was concluded that safety should be improved and benefit should be maximized (Felix et al., 2023). In short, it is seen that the subject of electric scooter is handled in many different aspects in the world. When the studies conducted in Türkiye are examined;

In the study conducted by Bolen and Çeliker in 2021, the Value Based Adoption Model was used and it was understood from the analysis results that consumers using scooters saw this service as a useful and enjoyable means of transportation. In the study conducted by Bozkurt and Celiker in 2021, the effect of consumers' perceived benefit and innovativeness on the intention to use electric scooters was investigated. According to the research, it has been revealed that the perceived benefit of consumers using electric scooters in Türkiye is more effective than consumer innovativeness (Bozkurt et al., 2021). In the study conducted by Ozelturkay et al. (2022), it was determined that people who use electric scooters use them for entertainment purposes and feel psychological benefit while using them. In addition, it was concluded that legislation or rules should be regulated for scooter use. Respondents felt that scooters needed a bike lane or a dedicated lane, otherwise people traveling on the sidewalk pose a threat to pedestrians. It has emerged that fines should be applied as a deterrent to solve this problem (Ozelturkay et al., 2022). In the study conducted by Topcuoglu et al. in 2022, it was concluded that participants who perceived public transport as risky and had a high level of environmental anxiety during the Covid-19 period had high intentions to use electric scooters (Topcuoglu vd., 2022).

According to the purpose of the study, the research problem is "What are the factors that lead consumers to use e-scooters?" And according to the literature review, an original research model has been created with reference to The Unified Theory of Acceptance and Use of Technology 2 developed by Venkatesh et al. in 2012. Through this model, the factors affecting consumers' behavioural intention to use e-scooters are analysed.

2. Research Methodology

With this study, it is aimed to investigate the effects of Performance Expectation, Effort Expectation, Social Impact, Facilitating Conditions, Price Value and Perceived Risk on consumers' Behavioral Intention to use electric scooters. Quantitative research method was used in the research. In this study, convenient sampling was chosen as the data collection technique and the online survey method was adopted. Scale developed by Venkatesh et al. (2012) scale developed by Laroche et al. for the variables of performance expectancy, effort expectancy, social impact, price value, facilitating conditions, and behavioral intention. For the perceived risk variable, its validity and reliability have been tested and accepted in the field (Laroche et al., 2005).

2.1. Research Model and Hypothesis

The research framework is presented below.

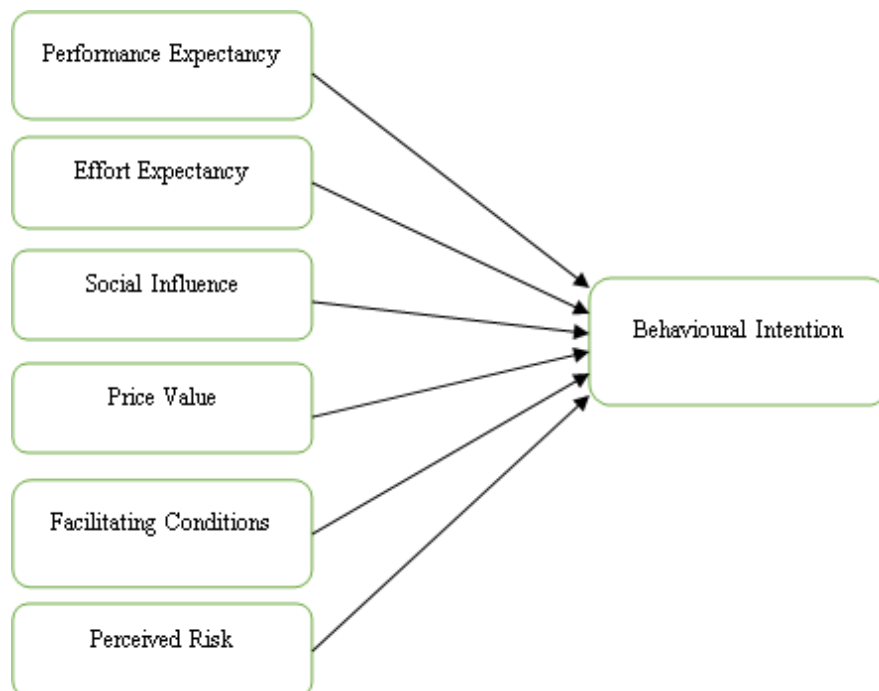


Figure 1. Research Framework

The hypotheses of the research are shown below. All hypothesis are need to be supported with literature.

Performance Expectancy

Performance expectancy (Venkatesh et al., 2012), which is derived from the structure of perceived usefulness (Davis, 1989) in the technology acceptance model, is an indicator of the extent of the benefit that consumers can obtain when using a technology. From the consumers' perspective, it is the motivation to use new technology. Therefore, the following hypothesis is assumed in this study; *H1: Performance expectancy positively affects consumers' intention to use electric scooters*

Effort Expectancy

It is the degree to which consumers can easily use any technology without any effort (Venkatesh et al., 2012; Chiu & Wang, 2008). If the technology to be used is easy to use, it is thought that the intention to use will be positively affected (Al-Okaily, 2020). Therefore, the following hypothesis is assumed in this study; *H2: Effort expectancy positively affects consumers' intention to use electric scooters.*

Social Influence

It is thought to have a significant effect on the behavioural intention of the individual (Ajzen & Fishbein, 1980) with the belief that the individuals who are valued in human life will use a certain technology (Venkatesh et al., 2012). Therefore, the following hypothesis is assumed in this study; *H3: Social influence positively affects consumers' intention to use electric scooters.*

Price Value

The consumers' intention is influenced by the relationship between the benefit they perceive during product or service use and the cost of use (Venkatesh et al., 2012). Therefore, the following hypothesis is assumed in this study; *H4: Price value positively affects consumers' intention to use electric scooters.*

Facilitating Conditions

It is considered as consumers' perception of the resources and support available at that time when trying to perform an event (Venkatesh et al., 2012), and it is known that facilitating conditions in digital applications are effective on intention (Verkijika, 2018). In order for people to use scooters, they must first use the mobile application correctly. Therefore, the following hypothesis is assumed in this study; *H5: Facilitating conditions positively influence consumers' intention to use electric scooters.*

Perceived Risk

It is a state of uncertainty that slows down the person because they cannot fully predict the outcome during decision making (Bauer, 1960; Stone & Mason, 1995). Since it slows down the behaviour of the person, it is very important to examine it. Therefore, the following hypothesis is assumed in this study. *H6: Perceived risk positively affects consumers' intention to use electric scooters.*

The sample of the study consisted of adult participants over the age of 18. In this study, convenience sampling method was used. Structural equation modeling (SEM) requires a sample size of at least 200 (Weston & Gore Jr., 2006), 307 people were reached by online survey method in this study. Microsoft Forms was used for the online survey. In the first part of the questionnaire form, questions were asked to learn demographic characteristics.

3. Findings

The demographic information of the participants is presented in the table below.

Table 1. Demographic Characteristics of the Participants(N:307)

Variables	Groups	F (Frequency)	% (Percentage)
Gender	Female	212	69,1
	Male	95	30,9
Age	18-25	85	27,7
	26-40	156	50,8
	41-56	54	17,6
	57 and over	12	3,9

Marital Status	Married	133	43,3
	Single	174	56,7
Education Status	High School	27	8,8
	Associate Degree	15	4,9
	Licence	112	36,5
	Postgraduate	153	49,8
Income Status	10.000 TL and below	146	47,6
	10.001- 15.000 TL	67	21,8
	15.001 TL and over	94	30,6

Considering the demographic characteristics of the participants, it was seen that 69.1% of the 307 participants were women and 78.5% were under the age of 40. It is seen that 86.3% of the participants have undergraduate or higher education. When the income status of the participants is analysed, it is observed that 47.6% of them have an income below 10.000 TL and 52.4% of them have an income above 10.001 TL.

3.1. Confirmatory Factor Analysis, Validity, Reliability

Structural equation modelling, which combines multiple regression and factor analysis to test the relationship between variables as well as hypothetical relationships, was used (Hair vd., 2019). Confirmatory factor analysis, which facilitates the development of measurement models and is the first stage in structural equation modelling, was performed. BI4 (Behavioural Intention), PR5 (Perceived Risk), FC4 and FC5 (Facilitating Conditions) expressions were removed from the scale expressions with factor loadings less than 0.6, respectively. After each statement was removed, the confirmatory factor analysis was run again and the factor loadings were analysed. Thus, since the factor loadings were not less than 0.60, the AVE (average variance explained by factors) value was greater than 0.50 and the CR (composite reliability) value was greater than 0.70 (Fornell & Larcker, 1981), it was seen that the discriminant and convergent validity of the research was provided.

Table 2. Factor loadings, Cr value, Ave value, Cronbach alpha (α) table

Items	Factor loadings	AVE	CR	Cronbach's (α)
Performance Expectancy PE1	,743	,69	,90	,893
Performance Expectancy PE2	,891			
Performance Expectancy PE3	,836			
Performance Expectancy PE4	,860			
Effort Expectancy EE1	,909	,70	,90	,899
Effort Expectancy EE2	,904			
Effort Expectancy EE3	,800			

Effort Expectancy EE4	,724			
Social Influence SI1	,926	,82	,93	,930
Social Influence SI2	,951			
Social Influence SI3	,844			
Facilitating ConditionsFC1	,717	,56	,73	,785
Facilitating ConditionsFC2	,742			
Facilitating ConditionsFC3	,799			
Price Value PV1	,861	,73	,91	,912
Price Value PV2	,908			
Price Value PV3	,918			
Price Value PV4	,722			
Perceived Risk PR1	,743	,51	,80	,808
Perceived Risk PR2	,661			
Perceived Risk PR3	,667			
Perceived Risk PR4	,785			
Behavioural Intention BI1	,853	,82	,93	,933
Behavioural Intention BI2	,943			
Behavioural Intention BI3	,932			

As a result of the confirmatory factor analysis, it was understood that the goodness-of-fit indices were within acceptable criteria (Schermele-Engel, Moosbrugger, & Müller, 2003). It is known that it will be sufficient to give 3 or 4 fit indices instead of reporting all of the model fit indices (Hair et al., 2019). Goodness of fit indices are given in the table below. When the results of the report were analysed, acceptable and goodness of fit indices were obtained within the scope of the measurement model. As a result, it is seen that the data collected in the research fits the measurement model created well (Hair et al., 2019).

Table 3. Model Goodness of Fit Indices Table

Goodness of Fit Indexes	Measurement Model Goodness of Fit Indexes	Reference Values	Results
CMIN/DF	2,760	CMIN/DF \leq 3	Perfect Fit
GFI	,84	,80 \leq GFI \leq 1	Acceptable Fit
RMSEA	,07	,03 \leq RMSEA \leq ,08	Good Fit
TLI	,90	,90 \leq TLI \leq 1	Acceptable Fit
CFI	,92	,90 \leq CFI \leq 1	Acceptable Fit

3.2. Structural Equation Modelling (SEM)

In the structural model, there are exogenous and endogenous structures and hypothetical directions between structures. While the exogenous structure is the equivalent of the independent variable, the endogenous structure is the equivalent of the dependent variable. Exogenous and endogenous structures are also referred to as latent variables in structural equation modelling (Hair et al., 2019). Accordingly, the endogenous structure in the structural model of the current study is behavioural intention and exogenous structures are performance expectancy, effort expectancy, price value, facilitating conditions, social influence and perceived risk.

In this study, a structural equation model was created to test the hypotheses of the model. Figure 2 shows the screenshot of the structural equation model created in the AMOS 24 programme, which is an extension of the SPSS programme.

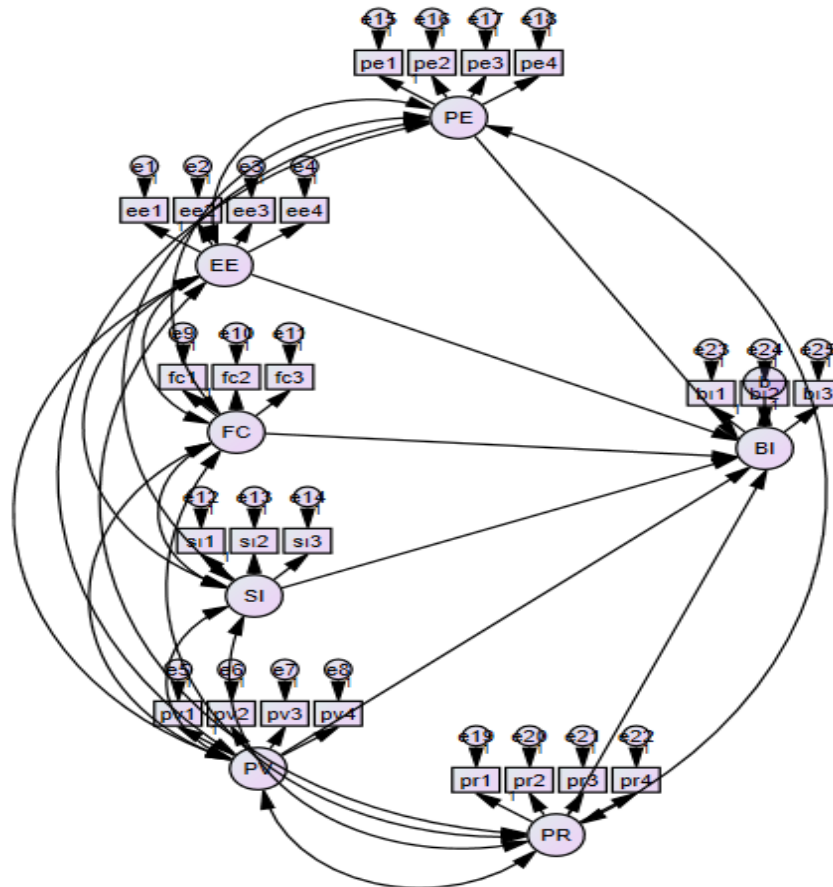


Figure 2: Structural Model of the Study

3.3. Path Analysis

Hypotheses were tested with the analyses. In order for a hypothetical relationship established in the model to be supported, the unstandardised regression load for the relevant relationship must be significant at the $p \leq 0.05$ level (95% confidence interval) (Weston & Gore Jr., 2006). Table 6 below shows the results of the path analysis. In the light of these results, hypotheses H1, H2, H4 and H5 are not supported. H3 and H6 hypotheses are supported.

Table 4. Path Analysis Results

	Estimate	S.E.	C.R.	P	Results
BI<---PE	,206	,072	2,867	,004	Not supported
BI<---EE	,130	,073	1,789	,074	Not supported
BI<---FC	,048	,087	,550	,583	Not supported
BI<---SI	,319	,049	6,484	***	Supported
BI<---PV	,097	,052	1,863	,062	Not supported
BI<---PR	-,454	,079	-5,727	***	Supported

CONCLUSION

It is becoming an increasingly important issue to examine the behavior of consumers regarding the use of shared electric scooters, which is becoming widespread day by day, and to be informed about their trends. Moreover, these vehicles, which take their place in almost every corner in metropolises today, even worn on their feet and attracting attention, are used easily and frequently by young people for entertainment purposes. Sharedelectric scooters have started to be widely used in many countries and in Turkey, especially in big cities, despite some negativities.

In this study, the effects of consumers' performance expectation, effort expectancy, social impact, facilitating conditions, price value, and perceived risk on consumers' behavioral intention regarding electric scooters were investigated.

According to the findings obtained as a result of this study; It is seen that rental scooters are not affected by facilitating conditions and price value due to factors such as the fact that their prices are more affordable than transportation vehicles such as taxis with similar features, the system is easy to use, and the users have no expectation of performance or effort due to factors such as rental scooters. In the study, it is seen that consumers are affected by their social environment in terms of renting electric scooters. Especially people who see that one of their friends or closecircle rent a scooter, may prefer to rent it. It is thought that people use these vehicles not only for short-term transport, but also for both the experience of using scooters and for entertainment (Özelturkey et al., 2022; Bolen & Çeliker, 2021). In the study, in parallel with the literature, it was concluded that social influence positively affects consumers' intention to use electric scooters.

On the other hand, in parallel with the literature, consumers perceive scooter use as risky in this study (Sucha et al., 2023; Felix et al., 2023; Almannaa et al., 2021). It is thought that the average age of the individuals we surveyed is also effective in this. Because most of the survey participants (68.4%) are between the ages of 26-56. In addition, it is thought that the study group's having a university or higher education also affects the perceived risk. It is seen that perceived risk positively affects consumers' intention to use electric scooters. In order to reduce the perceived risk, it is recommended that local governments organize bicycle lanes for scooter use, as in foreign countries. In order to prevent behaviors that threaten pedestrians such as using sidewalks as roads, parking in the middle of sidewalks, and uncontrolled use, scooter usage rules should be clearly defined and fines should be given to those who do not comply with the rules. In this way, walking short distances in big cities and especially in Istanbul or underground metro, marmaray, etc. Instead of walking to reach transportation vehicles, you can travel without getting tired and save time by using electric scooters. In future studies, issues such as age, gender, ease of use, sustainability can be focused on the use of electric scooters.

REFERENCES

- Aarhaug, J., Fearnley, N., & Johnsson, E. (2023). E-scooters and public transport – Complement or competition? *Research in Transportation Economics*(98),1-6. doi:<https://doi.org/10.1016/j.retrec.2023.101279>.
- Ajzen, I. & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice Hall.

- Almanaa, M.H., Alsahhaf, F.A., Ashqar, H.I., Elhenawy, M., Masoud, M. & Rakotonirainy, A. Perception analysis of E-scooter riders and non-riders in Riyadh, Saudi Arabia: Survey outputs. *Sustainability*, 2021, 13(2): 863. 10.3390/su13020863.
- Al-Okaily, M., Lutfi, A., Alsaad, A., Taamneh, A. & Alsyof, A. (2020). The determinants of digital payment systems' acceptance under cultural orientation differences: The case of uncertainty avoidance. *Technology in Society*, 63, 101367.
- Bauer, R. A. (1960). Consumer Behavior as Risk Taking. R. S. Hancock, In *Dynamic Marketing for a Changing World*, 389-398. Chicago: American Marketing Association.
- Boston Consulting Group. (2019). 2019 True-Luxury Global Consumer Insight. Milano: AltaGamma.
- Bozkurt, B., Aydoğan, S., & Aktan, M. (2021). Perceived customer benefits in renting electric scooter: The role of consumer innovativeness, *Journal of Social Sciences*, 6(2), 171-195.
- Bolen, M. C., & Celiker, O. (2021). Factors Affecting Usage Intention of Shared Electric Scooter Services. *Journal of Economics and Administrative Sciences*, 35(3), 1101-1123. doi:<https://doi.org/10.16951/atauniiibd.898594>
- Caspi, O., Smart, M. J. & Noland, R. B. (2020). Spatial Associations of Dockless Shared E-Scooter Usage. *Transportation Research Part D: Transport and Environment*, 86, 102396.
- Chicco, A., & Diana, M. (2022). Understanding micro-mobility usage patterns: A preliminary comparison between dockless bike sharing and e-scooters in the city of Turin (Italy). *Transportation Research Procedia*(62), 459-466. doi:10.1016/j.trpro.2022.02.057.
- Chiu, C. M. & Wang, E. T. (2008). Understanding Web-Based Learning Continuance Intention: The Role of Subjective Task Value. *Information ve Management*, 45(3), 194-201.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 318-339.
- Eccarius, T., & Lu, C.-C. (2020). Adoption intentions for micro-mobility – Insights from electric scooter sharing in Taiwan. *Transportation Research Part D: Transport and Environment*, 84. doi:<https://doi.org/10.1016/j.trd.2020.102327>
- Félix, R., Orozco-Fontalvo, M., & Moura, F. (2023). Socio-economic assessment of shared e-scooters: do the benefits overcome the externalities? *Transportation Research Part D*(118), 1-15. doi:<https://doi.org/10.1016/j.trd.2023.103714>
- Fornell, C., & Larcker, D. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.
- Gemius Turkey (2020.04.2022). “Elektrikli Scooter'lar Milyonların Ayağını Yerden Kesti”, <https://www.gemius.com.tr/974/elektrikli-scooterlar-milyonlarn-ayagn-yerden-kesti.html>, (02.06.2023).
- Gössling, S. (2020). Integrating e-scooters in urban transportation: Problems, policies. *Transportation Research Part D*, 79. doi:<https://doi.org/10.1016/j.trd.2020.102230>.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24.
- Jacques, K., 2019. Solving for the first/last mile: Micro-mobility looks to bridge city transportation gaps. U.S. Green Building Council. <http://plus.usgbc.org/solvingfor-the-first-last-mile-micro-mobility-looks-to-bridge-city-transportation-gaps/>.
- Laroche, M., Yang, Z., McDougall, G. H., & Bergeron, J. (2005). Internet versus bricks-and-mortar retailers: An investigation into. *Journal of Retailing*, 81(4), 251-267. doi:<https://doi.org/10.1016/j.jretai.2004.11.002>.
- Nacto, (2018). Sharaed Micromobility in the U.S.:2018, <https://nacto.org/shared-micromobility-2018>, Access: 09/11/2020.

- Nikiforiadis, A., Paschalidis, E., Stamatiadis, N., Raptopoulou, A., Kostareli, A. & Basbas, S. (2021). Analysis of Attitudes and Engagement of Shared E-Scooter Users. *Transportation research part D: Transport and Environment*, 94, 102790.
- OECD/ITF (2020). Safe Micromobility, <https://www.itf-oecd.org/safe-micromobility> (02.06.2023).
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating The Fit Of Structural Equation Models: Tests of Significance And Descriptive Goodness-of-Fit Measures. *Methods of Psychological Research*, 8(2), 23–74.
- Stone, R. N., & Mason, B. J. (1995). Attitude and Risk: Exploring the Relationship. *Psychology & Marketing*, 12(2), 135-152. doi:<https://doi.org/10.1002/mar.4220120205>
- Sucha, M., Drimlova, E., Recka, K., Haworth, N., Karlsen, K., Fyhri, A., . . . Slotmans, F. (2023). E-scooter riders and pedestrians: Attitudes and interactions in five countries. *Heliyon*(9), 1-18. doi:<https://doi.org/10.1016/j.heliyon.2023.e15449>
- Topcuoglu, Y., Yilmaz, V., & Arı, E. (2022). Investigation Of Shared E-Scooter Usage By Partial Least Squares Structural Equation Modelng. *ERÜ - İİBFD* (63), s. 83-90. doi:10.18070/erciyesiibd.1112977.
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), s. 157-178.
- Verkijika, S. F. (2018). Factors Influencing the Adoption of Mobile Commerce Applications in Cameroon. *Telematics and Informatics*, 35(6), 1665-1674.
- Weston, R., & Gore Jr., P. (2006). A Brief Guide to Structural Equation Modeling. *The Counseling Psychologist*, 34(5), s. 719-751. doi:10.1177/0011000006286345
- Yasa Ozelturkay, E., Yalcintas, D., & Oguz, S. (2022). A Pilot Study On The Use Of A Shared Electric Scooter (E-Scooter). 26th Marketing Congress, 595-610. Kırşehir.

VISIBILITY OF ARTIFICIAL INTELLIGENCE APPLICATIONS IN DIGITAL MARKETING ON WOS¹

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Abstract

Until recently, it was a matter of preference for businesses to benefit from digital marketing strategies while maintaining marketing practices. Due to factors such as pandemics, wars, and economic crises experienced in the past decade, coupled with technological developments that are progressing by leaps and bounds, it has become mandatory for businesses to use digital marketing strategies today. For this reason, many businesses small-to-big have understood the necessity of existing both physically and digitally. Digital marketing facilitates the process for businesses to interact and communicate with customers more intimately and faster. In addition, the ability of consumers to access unlimited information about products and services in the digital environment; the ability to compare products, prices, brands, and consumer experiences within seconds also provides various advantages for the consumer. However, situations that are an advantage for customers are sometimes disadvantageous from the point of view of businesses. This situation has made it difficult to retain the consumer. This difficulty is being overcome through artificial intelligence applications from the point of view of many businesses. Artificial intelligence assistants, which can quickly learn consumer preferences and evaluate these preferences, provide a great advantage in directing customer preferences to match customer preferences by analyzing their past experiences and profiles. While the industry is trying to take advantage of the advantages of artificial intelligence, researchers are also conducting research and experiments in many areas, including marketing related to artificial intelligence, all over the world. While academic studies are being carried out by researchers, artificial intelligence is also developing every day and it is difficult to keep up with the pace of development. For this reason, determining the axis on which academic studies related to artificial intelligence are conducted and the main theme is important for researchers to identify shortcomings and direct their studies. In this direction, the published studies related to artificial intelligence in the December 2022 – 2023 date range were scanned on the Web of Science, where scientific studies in the academic field are included and their visibility is ensured in the world. The ones of these studies that have artificial intelligence, AI, ChatGPT, and marketing keywords have been quantitatively examined in various fields such as publication year, publication type, origin, and author keywords. As a result of the examination, it was observed that although artificial intelligence is a very current topic for all fields, there are very few publications on artificial intelligence and digital marketing in the field of marketing.

Keywords: Artificial Intelligence /AI, Marketing, Digital Marketing, Web of Science (WOS)

JEL Code: M30, M31

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INTRODUCTION

Today, customer data obtained from channels such as the Internet and social media is very valuable for marketing professionals but finding and managing the way in very large datasets is quite complicated. This data, which is quite difficult to collect and process manually, can be collected very quickly and analytically by artificial intelligence. Artificial intelligence (AI) can analyze customer behavior and unlock the best within larger datasets. Through AI and machine learning, business owners and marketers can be aware of the latest trends and changes in customer behavior. This helps to create smarter and more effective marketing strategies. For example, AI technology can use algorithms to detect customer preferences and even customer feelings and can help send more personalized marketing messages to the customer. This also increases customer loyalty and customer satisfaction by creating customer value.

AI also plays a major role in customer service. Thanks to AI technologies, ChatGPT, chatbots, or other virtual assistants can receive basic customer requests and respond quickly (Gao and Lie, 2023: 318). The execution of the most basic tasks by AI relieves customer service departments and becomes a tool to deliver a better customer experience (Nwachukwu and Affen, 2023:57). AI can also be used to increase advertising efficiency. Through detailed data analysis, the most appropriate target audience for advertising campaigns can be identified and advertisements can be made more effective (Okat and Kadirhan, 2020:97).

As a result, AI technology offers a great opportunity for marketing professionals. With AI, it can create more effective marketing strategies, make customer service departments more efficient, and ensure advertising campaigns are more successful. Therefore, using AI as an effective tool for marketing can bring great benefits to. The innovations brought by the Internet and information technologies and the increasing number of online customers have made digital marketing mandatory as it is known. Digital channel is a very dynamic measure and brands should develop an interactive and effective communication process with consumers. Consumers are sensitive beings. They want to be appreciated, taken seriously, and answer every question of them. AI can communicate with consumers faster and more analytically today. This has even made AI an inevitable game-builder in digital marketing strategies.

Even though not all have adapted to AI applications today, industry leaders and innovative leaders have already begun to use artificial intelligence in their digital marketing strategies. Whether it's the industry's major acceptance or not, its academic work has also led to work to identify the theoretical foundations and shortcomings of the relationship between artificial intelligence and digital marketing. To this end, this research is intended to be defined by studying the worldwide visibility of the scientific research carried out by marketing researchers in the field of digital marketing and artificial intelligence within the academic framework. Web of Science (WOS) is prestigious in this regard and its scope is an acknowledged database worldwide. This is why the WOS database has been reviewed.

1. Literature Review

1.1. Digital Marketing

The rapid adoption of advanced technologies over the last decade has made consumers who want to get everything instantly, effortlessly, and at the lowest cost quite impatient. As a driving result, almost every business has had to go through the digitization phase to be more productive, automated, and evolve (Joshi, 2021). This new phase has unveiled the concept of digital marketing that we face every moment today but first began to be used in literature in the 90s. According to Bîrzu (2023), digital marketing is a model of advertising delivered through e-mail, blogs, websites, search engines, etc. digital channels. The American Marketing Association (AMA, n.d.) defines digital marketing as a dynamic and two-way process that requires interactive communication with the consumer as opposed to traditional methods. In short, digital marketing is any type of online marketing effort carried out by companies through electronic devices that can connect to the Internet to their marketing goals.

With the explosion of digital technology, including the widespread use of computers and smartphones, along with the increase in the number of Internet users, have begun to try out new marketing tactics, which are the origin of digital marketing (AMA, n.d.). As a result of the introduction of Google in 1988, consumers were able to find information about the products and services they were interested in in the digital environment, resulting in a change in their purchasing behavior (Bîrzu, 2023:75). While consumers can search for products and services from their websites, businesses have begun to track and understand their visitors' behavior using both general traditional methods and online methods using Google AdSense. The use of digital marketing strategies along with traditional marketing strategies has brought the concept of multi-dimensional (interactive) marketing to the fore.

Since its first introduction in the 1990s, digital marketing has become today with the accumulation of various innovations and processes. As shown in Table 1, after the first use of the concept of digital marketing in the 1990s, the first search engine Archie was launched. In 1994, the first online advertising banners were created and the first e-commerce process took place. Between 1994-1998, Amazon, Yahoo, Microsoft, and Google emerged, which we all know today. In 1997, the social media site Sixdegrees.com, leaving its place today to young competitors such as Instagram, Facebook, and TikTok, opened. Universal Music, Linked In, Word Press, Gmail, Facebook, Youtube, and Twitter were released between 2000 and 2010. The I-phone, which has created high-price competition with the value of the brand it has created today, has also been launched in the years (Bose, 2020; Goel, 2022).

Table 1.The Brief History of Digital Marketing

Date	Event	Date	Event	Date	Event
1990	The term digital marketing was used for the first time.	2001	Universal Music mobile marketing	2010	Instagram is on the market.
1990	Archie; the first search engine launched	2003	Linked-In and Word Press released	2011	Internet usage has surpassed television usage among young people
1994	First clickable web ad banner	2004	Gmail has started	2011	Snapchat introduced to the market
1994	The first e-commerce event has taken place	2004	Facebook is in the market	2013	Social media advertising budgets increase

1994	Amazon is on the market	2005	YouTube is launched	2013	Amazon is the leader in e-commerce
1995	Yahoo launched	2006	Twitter is launched	2014	Facebook Messenger introduced
1997	The first social media site opened	2007	iPhone launched on the market	2014	Mobile traffic exceeds desktop traffic
1998	Meeting with Google	2009	Google's real-time search engine results launched	2015	Marketing has gained importance
1998	Microsoft launches its search engine	2009	WhatsApp is launched	2019	91% of Facebook advertising revenue comes from mobile advertising

Source: Merged from Bose (2020) and Goel (2022).

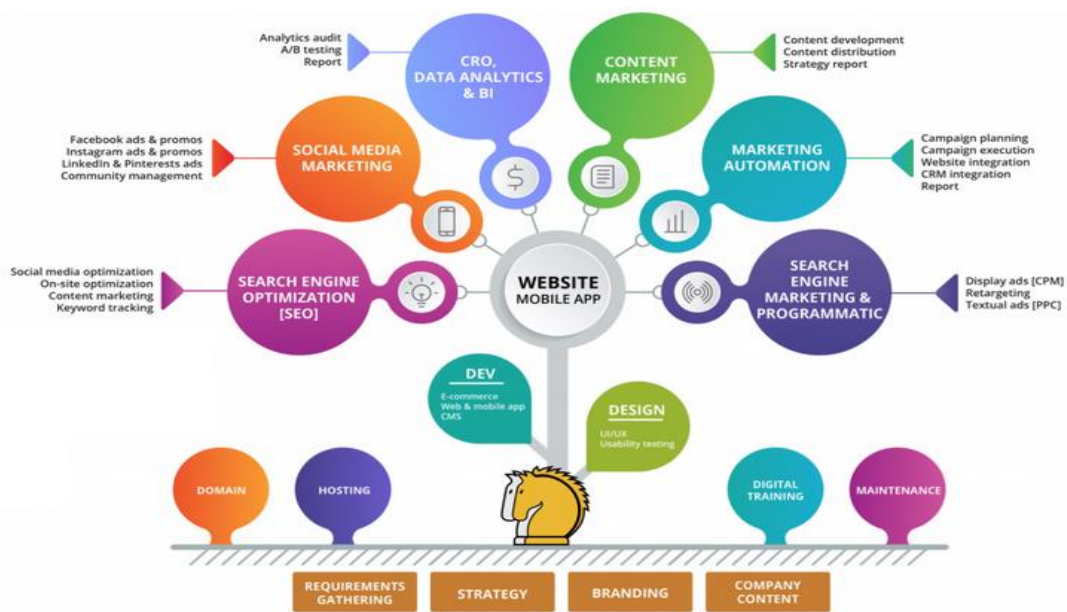


Figure 1. Series of Digital Solutions

Source: Shah, 2020.

In previous years, using digital marketing strategies was a matter of preference for businesses. In the past five years, the covid-19 epidemic, which has affected and limited the whole world, followed by the wars and the applications that caused the loss of physical communication with consumers have made it necessary for businesses to be in digital media and use digital marketing strategies. Even small entrepreneurs who are unable to withstand economic pressures have left physical stores and traditional marketing strategies and have only started to exist in the digital marketplace. As can be seen in Figure 1, there are many different digital marketing strategies (social media marketing, content marketing or search engine marketing) and marketing tools (search engine optimization, data analytics, marketing automation) that influences a mobile app or web site (Shah, 2). Today, when digital marketing is inevitable, technology has created a new helper for AI. While discussions on the use of AI in marketing are ongoing, it is predicted that digital intelligence- based marketing will continue to exist as long as the online population increases (Ryan & Jones, 2014:2).

1.2. AI and Marketing

Traditional digital marketing is time-consuming and expensive as it involves a significant amount of resources (money and human) based on manual processes, and pre-defined performance criteria, and can bind. This is where AI is used (Yaiprasert & Hidayanto, 2023:4). AI can search the web in milliseconds, and access user profiles and preferences. It can analyze the data it obtains without the need for another assistant and can respond to the customer's request much faster than manual applications. Therefore, AI has been used in digital marketing applications. AI-based digital marketing is an automated process that uses algorithms to create targeted ads, tailor campaigns to demographic variables, and track process errors. The fact that these practices can be done by separating fewer people and financial resources helps marketers save time and money while facilitating and enhancing their communication and interaction with their target audiences (Yaiprasert and Hidayanto, 2023:4).

Big sized businesses, such as Red Balloon and Harley Davidson, can be given as an example that uses AI in digital marketing. These businesses with high brand awareness use AI to automate advertising campaigns as part of their digital marketing strategies. But since the process of using AI in digital marketing has only just begun, it is a fact that conceptualizing, theorizing, and exploring its details is still at the very beginning of the process (Esch & Black, 2021:1). These shortcomings, combined with the lack of knowledge in the field from the point of view of marketers, can be said to have to struggle a lot to take advantage of the opportunities offered by the marketing of AI technology (Broadhurst, 2022:122).

The most well-known examples of AI applications used in marketing are chatbots. Chatbots help to automate the various stages of the marketing process in terms of responding to FAQs, recording customer contact information, and solving key problems that you may often encounter. In addition, chatbots can interact with customers without any source support. They can present the brand they represent at a good level and ensure that consumers communicate with the business or the brand. This makes it easier for the marketing team to focus more on critical and strategic issues. In addition, chatbots that quickly return to the consumer can also increase the volume of their marketing conversations thanks to this feature (Nail & Gupta, 2020:324).

ChatGPT, which can be defined as an AI chatbot, is an advanced state of chatbots (www.mynet.com, 2022). Launched as a prototype on November 30, 2022, ChatGPT showed everyone how much space and ease AI can be used, not just for marketers. ChatGPT, which uses deep learning, has even reached its best in a period of 4-5 months from the day it was launched. ChatGPT is versatile in terms of marketing, such as text writing, video creation from text, content creation for blogs, and time-space operations that can be done on their own in a short time. In March 2023, the Kit Kat brand launched advertising films that are fully supported by AI (Uyan, 2023). However, the prevailing sentiment was that these advertisements were far from human intelligence and aesthetic point of view.

AI, which is capable of learning itself, has now evolved to a level where it can almost understand human emotions as well. Therefore, taking advantage of chatbots that can understand customer emotions can raise the perceived customer experience to a significant level and increase the awareness and attractiveness of the business/brand (Joshi, 2021). As a result, the use of AI-based digital marketing strategies (Strauss, 2023):

- For marketing experts; This means saving a lot of time they would have to spend on manual data analysis and developing targeted campaigns.
- For consumers; increases the likelihood of encountering content they will enjoy. This can either excite them or, on the contrary, frighten them.

1.3. Web of Science (WOS)

The Web of Science Core Collection database is the oldest citation index for sciences, which has survived from the early 1900s to the present day (Birkle et al., 2020:363), covering many subject areas, including natural sciences, social sciences, arts and humanities, and health sciences (Dölek, 2015). Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, Conference Proceedings Citation Index-Science, Conference Proceedings Citation Index-Social Science & Humanities, Book Citation Index-Science, Book Citation Index-Science (Dölek, 2015), in the database in which approximately 34,000 journals are scanned around the world – more than 75 million scientific records (Birkle et al., 2020) (editorial notes, articles, books, book chapter, conference paper, etc.).

In addition to cataloging academic publications, WOS is a structured, balanced (Birkle et al., 2020:364), expert, objective (Clarivate Analytics, 2016), and quite prestigious database with reference links between publications and advanced metadata that support a wide range of information purposes (Birkle et al., 2020:364). Thanks to this feature, researchers can access all related records using the work, references, and subject relationships of expert researchers who produce publications worldwide in the field they work with (Clarivate, n.d.). In summary, The WOS database is a wide platform where researchers can follow developments in their fields, publish their innovative ideas, and ensure their visibility in the world academic community.

1.4. Development of Marketing Studies in WOS

With the development of computer use and the internet, digital marketing applications have developed exponentially and the existence of deficiencies and unknowns in the application have also directed the direction of academic studies to consumer behavior in the digital environment. Figure 2 shows the development of academic studies on digital marketing.

The 1980s were the era of email marketing when web pages began to flourish commercially. In this period, studies such as what are the ethical rules to be considered in e-mail marketing, how to market using e-mail, how to increase the customer population (Attaran, 1999; Howes and Mailloux, 1999; Oikle, 1997) stand out. The 2000s were the years in which, search engines, electronic word of mouth, user content, shared value creation, and social media (Deighton and Kornfeld, 2009; Dou and Chou, 2002; Maltz and Chiappetta, 2002; Rowley, 2008) academic studies were on the subject in many studies. The 2010s were the period also when, search engines, electronic word of mouth, user content, shared value creation, and social media (Musova and Poliacikova, 2018; Ryu, 2015; Sokolova and Titova, 2019; Tchelidze, 2019; Wirth, 2018) academic studies were in force in many studies.

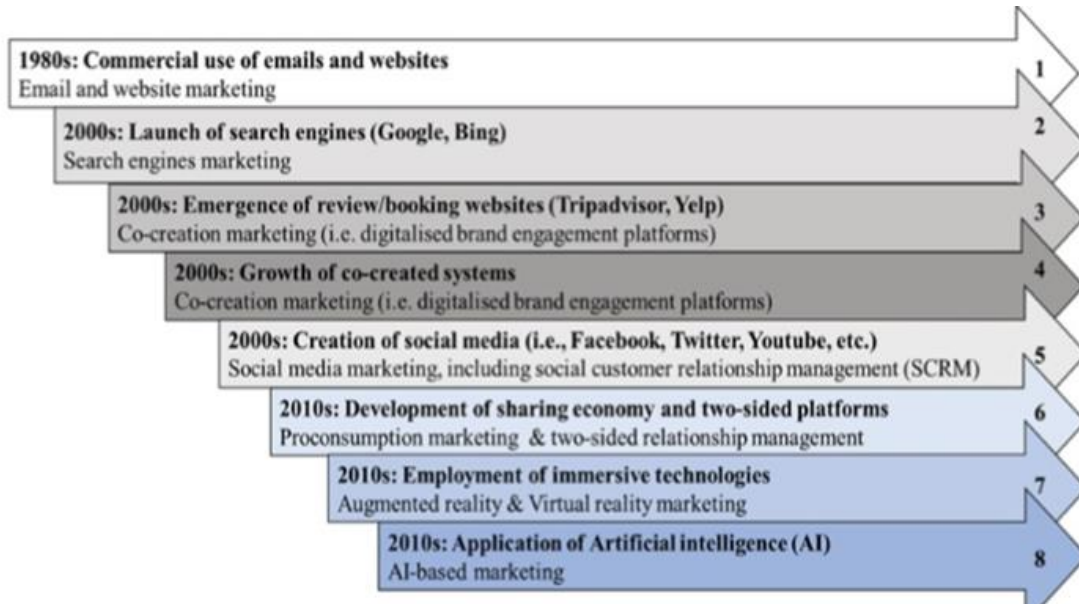


Figure 2. Major Research Flows in Digital Marketing Over Time

Source:(Le, 2021:3)

2. Research Methodology

2.1. Methodology

This research is a descriptive analysis study. The purpose of this research is to describe the scientific research carried out by marketing researchers in the fields of digital marketing and artificial intelligence by examining the visibility of the world in the academic community. For this purpose, the studies in the WOS database were examined. The research was limited to the digital marketing studies, published between 01.01.2020-31.03.2023, identified with artificial intelligence, AI, ChatGPT, and marketing author keywords and categorized in the Business category of WOS.

2.2. Research Steps and Findings

2.2.1. Initial Search

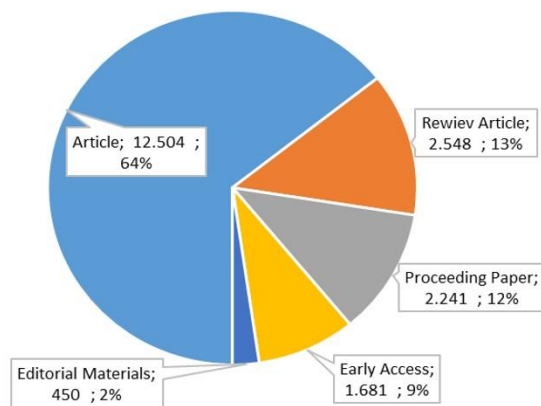


Figure 3. Documents Refined According to Type

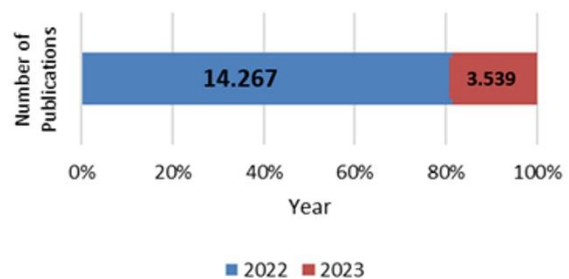


Figure 4. Documents Refined According to Years

First, all the articles published between January 1, 2022, and March 31, 2023, containing the keywords “artificial intelligence” or “AI” were scanned. There are 17,806 results from the Web of Science Core Collection. These studies are classified according to the year of publication, type of document, the field of research, and country in which they were published (not the origin of the studies, but the source of their publication).

Research Areas	
<input type="checkbox"/> Computer Science	5,320
<input type="checkbox"/> Engineering	4,331
<input type="checkbox"/> Telecommunications	1,024
<input type="checkbox"/> Chemistry	981
<input type="checkbox"/> Business Economics	842

Figure 5. Documents Refined According to Research Areas

<input type="checkbox"/> USA	3,742
<input type="checkbox"/> PEOPLES R CHINA	3,153
<input type="checkbox"/> INDIA	1,448
<input type="checkbox"/> ENGLAND	1,360
<input type="checkbox"/> GERMANY	1,343
<input type="checkbox"/> ITALY	1,185
<input type="checkbox"/> SOUTH KOREA	935
<input type="checkbox"/> AUSTRALIA	814
<input type="checkbox"/> CANADA	758
<input type="checkbox"/> SPAIN	746

Figure 6. Documents Refined According to Countries

There are 14,267 studies in 2022, and 3,539 studies were defined by AI author keywords at the end of the first quarter of 2023 (Figure 4). When viewed proportionally, the number of studies published in the first quarter of 2023 is in parallel with the number of publications in the quarter of 2022. It can be said that there has not been an increase in the number of publications as expected. Studies of related keywords are grouped under five document types (Figure 5): article, review article, proceeding paper, early access, and editorial materials. It is seen in Figure 3, that 77% of the results are articles. It is seen that studies with artificial intelligence keywords are mostly published in the computer science area (29.88%), then in engineering area (24.32%), followed by telecommunications area (5.75%) and chemistry area (5.51%). On the other hand, business economics ranks fifth with a rate of 4.73%. Considering the research areas, it can be said that application-oriented researches are still intense, but there are few sufficient studies on how to find a place for itself in business practices.

WOS refines studies based on their published origin. As a result of the query, it is seen that 21% of the studies were from the USA, 17.8% from China, and 8% of them from India. The first three are followed by publications originated from England (7.64%) and Germany (7.54%). Publications which are originated from Türkiye, on the other hand, correspond to the 1.61% slice and are in the 23rd place in the country ranking.

2.2.2. Second Search

In the second stage, the search was limited to publications using artificial intelligence/AI and marketing author keywords together. 14,875 results scanned in the Web of Science database were obtained. Again, these studies were refined based on publication year, document type, research area, and country of publication.

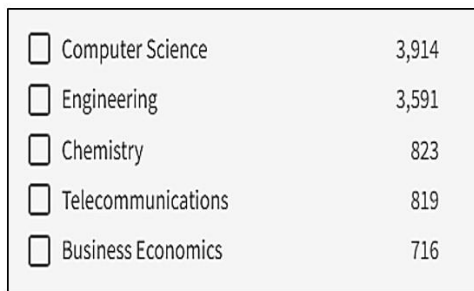


Figure 7. Documents Refined According to Research Areas

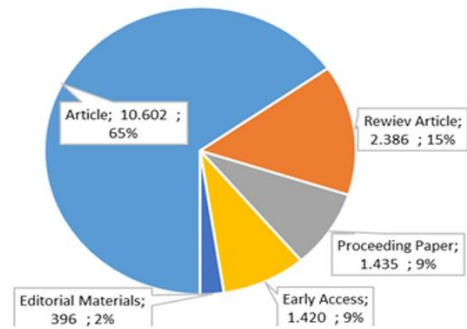


Figure 8. Documents Refined According to Type

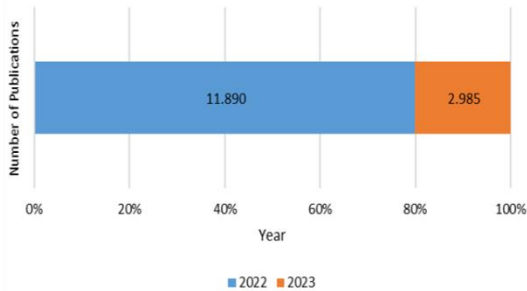


Figure 9. Documents Refined According to Years

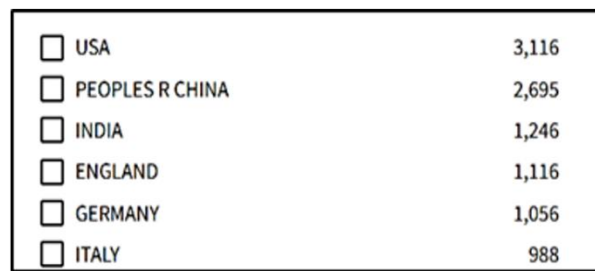


Figure 10. Documents Refined According to Country

There are 11,890 studies in 2022 and 2,985 studies at the end of the first quarter of 2023, defined by the keywords of artificial intelligence and marketing author (Figure 9). When viewed proportionally, the number of studies published in the first quarter of 2023, similar to the studies published with the AI keyword, is parallel to the number of publications made in the quarter of 2022. It is seen that 71% of these published studies are articles (Figure 8). Similarly, studies with AI and marketing keywords (Figure 7) have been published mostly in computer science (26.31%), followed by engineering (24.14%), chemistry (5.53%) and telecommunications (5%, 51) areas.

On the other hand, business economics ranks fifth with a rate of 4.81%. The first two places seem preserved in AI and marketing-oriented studies, but chemistry takes the third place from communication. Although business economics has increased the percentile, it still does not appear in sufficient numbers in studies. As a result of the query made on a country basis, it is seen that the studies are ranked as USA, China, India, England, and Germany, respectively. Publications which are originated from Türkiye, on the other hand, correspond to the 1.75% slice and continue to rank 23rd in the country ranking (Figure 10).

2.2.3. Third Search

In the third stage, publications using AI and marketing author keywords are limited to those published in the research area of business economics of WOS. It was concluded that only 716 of the 14,875 publications scanned under the Web of Science Core Collection were scanned in this study area. Again, these studies have been refined by publication year, document type, research area, and country of publication.

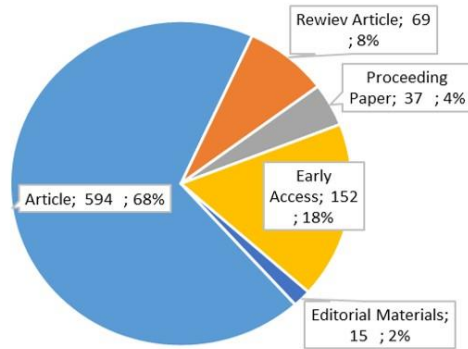


Figure 11. Documents Refined According to Type

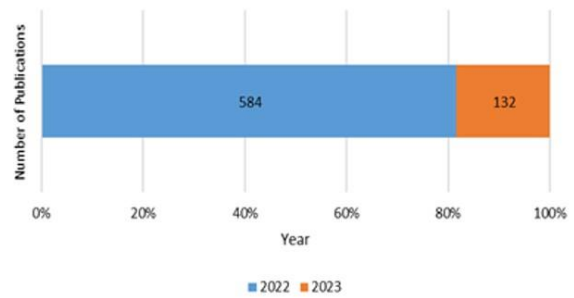


Figure 12. Documents Refined According to Years



Figure 13. Documents Refined According to Country

There are 584 studies in 2022 and 132 at the end of the first quarter of 2023, published under the business research area defined by AI and marketing author keywords (Figure 12). It is seen that 82% of these published studies are articles. When viewed proportionally, the number of studies published in the first quarter of 2023, like the previous surveys, is approximately parallel to the number of publications made in the quarter of 2022. However, it was expected that the studies on the theoretical and conceptual parts of artificial intelligence, which found a great place in practice, would increase with rising momentum. In addition, unlike previous scans, it is striking that the number of early access has increased proportionally. This means that the number of publications in 2023 is even less than in previous surveys (Figure 11). As a result of the country-based query, it is seen that most publications in the field of business economics are from the USA (22.21%) and China (14.25%). England (13.13%) ranks third, while India (9.78%) and Germany (9.22) rank fourth and fifth. Publications originated from Türkiye, on the other hand, correspond to the 2% slice and rise to 19th place in the country ranking (Figure 13).



Figure 4. Documents - Refine By Country

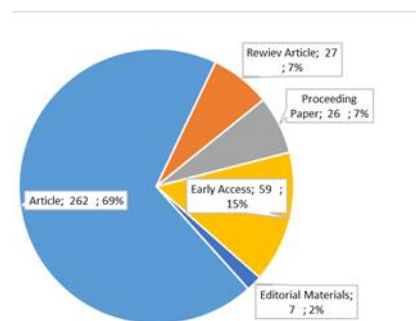


Figure 3. Documents Refine By Type

2.2.4. Forth Search

In the fourth stage, studies that were limited to the business economics research area were also limited to those in the WOS business category. A total of 322 results were achieved (Figure 14), 257 of which were published in 2022 and 65 of which were published in 2023. Again, 81% of these results consist of articles (Figure 15). When the distribution of publications based on countries is examined, it is seen that the first three do not change at all. In Türkiye, on the other hand, has only 2 publications (0.62%) in the WOS business category have been observed and ranks 51st among the countries publishing in the field.



Figure 14. Documents Refined According to Country

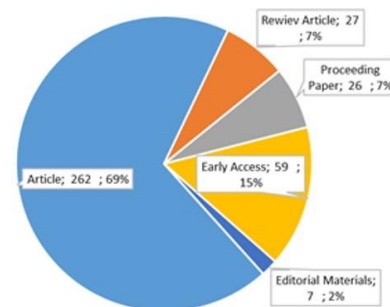


Figure 15. Documents Refined According to Type

2.2.5. Fifth Search

The studies in which the words "digital marketing" were used in any field were scanned in the publications that were defined with AI and marketing keywords, in the business economics research area category and the WOS business category. As a result of the limitations, a total of 28 studies, 23 of which were published in 2022 and 5 of which were published in the first quarter of 2023, could be reached.

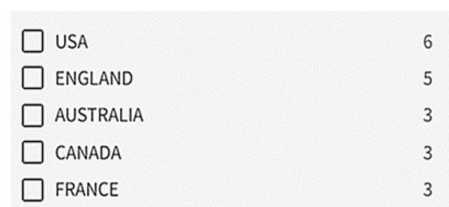


Figure 16. Digital Marketing Refined According to Country

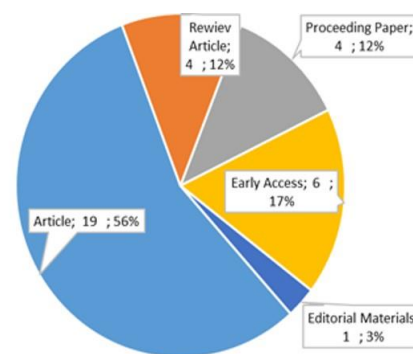


Figure 17. Digital Marketing Refined According to Type

2.2.6. Sixth Search

Finally, publications containing the ChatGPT author keyword were scanned. Only one study was found in the field of marketing. Thus, a total of 29 digital marketing studies containing AI and marketing keywords were obtained. These studies were classified in terms of author keywords used by their authors to describe the study.

It has been determined that 141 different keywords are used in 29 different studies. Among these keywords, the most repeated (24 times) artificial intelligence/AI words. As can be seen in Table 2, while AI creates the common definition, other keywords show that it focuses on specific topics such as anthropomorphism, social media marketing, customer, digital customer, digital marketing, data, competition, and digital technologies. In the relationship between artificial intelligence and digital marketing, researchers work multi-dimensionally, but the inadequacy of the number of studies is one of

Table 2.First 50 Author Keywords

Frequency	Auther Keywords	Frequency	Auther Keywords
24	Artificial Intelligence /AI	1	Bahrain
3	Anthropomorphism	1	Behavioral Sciences
3	Conversational Agents	1	Benefits
3	Digital Marketing	1	Business Model Configurations And Business Model Innovation
3	Internet Of Things	1	Case Study Research
2	Base-Of-The-Pyramid (BOP)	1	Chatbot Trust
2	Big Data	1	Chatgpt
2	Chatbots	1	Collaboration Roadmapping
2	Customer Journey	1	Collaborative Economy
2	Digital Assistants	1	Competence
2	Digital Technologies	1	Consumer
2	Marketing	1	Consumer Technology Interaction
2	Privacy	1	Conversational Commerce
2	Social Media	1	Customer Journey Map
2	Social Media Marketing	1	Data Monetization
1	Additive Manufacturing (AM)	1	Data Sharing
1	Activities	1	Digital Consumers
1	AI Algorithms	1	Digital Innovations
1	AI-Activated Value	1	Digital Interactions
1	AI-Based Learning Platforms	1	Digital Platforms
1	Artificial Intelligence (AI) And Autonomous Solutions	1	Digital Retail
1	Artificial Intelligence-Enabled Personalization	1	Digital Servitization
1	Augmented Reality	1	Digital Shopping Assistant
1	Autoencoder	1	Digital Tools
1	B2B	1	Digital Transformation

the inferences that can be made from keywords.



Figure 5.AI & Marketing Author Keywords Top 25

CONCLUSION

As a result of efforts towards digitalization, businesses have evolved their marketing activities from traditional to virtual. Literature studies in the field have focused on researching the effects of digital

activities on businesses, from e-mail marketing to artificial intelligence applications, to overcome digital marketing in this context. The common deduction of a significant portion of the current research reveals that businesses that adopt digital marketing can perform much better. In the studies carried out to date; consumer awareness of digital marketing, consumer expectations, and satisfaction depending on various factors, digital consumption experience and re-purchase relationship have been examined. Also, cooperation systems, types of digitalization and its effects on digital marketing activities and digital strategies, digital change and accordingly legal/political/social issues such as its effects have been examined on quite different platforms, especially on technical infrastructure.

Between January 2022 and March 2023, 17,806 studies were found in the academic search on WOS on digital marketing and artificial intelligence in the business category. In 2022, it was seen that academic studies on the relationship with many concepts in the field of artificial intelligence were carried out, but contrary to expectations, it continued in the same parallelism in 2023 proportionally. Approximately 95% of these studies are related to technical application areas such as computers, engineering, and communication. Lack of studies in social science show that the social effects of artificial intelligence need to be investigated. In the country of origin ranking, Türkiye took 23rd place with the studies carried out in the field of social sciences. In the second search made with artificial intelligence and marketing keywords, 14,875 works, mostly articles, were reached. Although the general distribution of the studies is in parallel with the first survey, it has been determined that the number of studies in the field of chemistry has increased. In the third search, only 716 studies in the field of business economics were identified, but due to the increasing importance in 2023, much more publications were expected, and results were obtained in parallel with 2022. However, the proportional increase in the number of early access in this period draws attention. Türkiye was ranked 19th in origin publications. In the fourth survey, the field of the business economy was limited to the business category, and a total of 322 studies were reached. Türkiye has two publications in this category. In the fifth scan, "Digital Marketing" was used as a keyword in any field and a total of 28 studies were reached. In the sixth and final search, only one work was found in the marketing field containing the ChatGPT keyword.

29 different studies using 141 keywords show that academics work multi-dimensionally in terms of digital marketing and AI, although it is seen that they focus on specific studies in certain fields, these fields are far from meeting the requirements of the free market yet. In particular, the experiences on the free market reveal the expectations for the development of models for consumer personalized and localized decision-making, the establishment of the relationship between AI and robotics/automation technologies, and the development of virtual experience and the execution of routine activities by AI. For this reason, it is thought that future studies on AI and digital marketing will gain momentum toward the development of the social dimension rather than the technical dimension.

In summary, we can say that academic studies in the literature have focused on investigating the effects of digital marketing and artificial intelligence (AI) on businesses. However, there is a lack of research on the social effects of AI in the social sciences, highlighting the need for more research in this area. Additionally, while there has been a significant amount of work on AI-related technical areas, the social aspects have not received enough attention. Scholars have explored various dimensions of digital marketing and artificial intelligence, but there is still a gap between their work and the requirements of the free market. Future work is expected to focus on consumer personalized decision making, the relationship between artificial intelligence and robotics/automation technologies, virtual experiences,

and routine task execution by artificial intelligence, with more emphasis on the social rather than purely technical aspect. Overall, there is a growing need for research exploring the societal implications of AI in the context of digital marketing.

This research is limited to digital marketing studies that include artificial intelligence (AI), marketing and chatgpt author keywords published on the web of science. It also has limitations in the context of the time range. Research on different platforms may yield different results.

REFERENCES

- American Marketing Association. (n.d.). What is digital marketing?. Retrieved May 16, 2023, From <https://www.ama.org/what-is-digital-marketing/>.
- Attaran, M. (1999). Internet-based business opportunities: buyers beware of scams. *Information management & computer security*, 7(4), 176-178.
- Birkle, C., Pendlebury, D. A., Schnell, J., and Adams, J. (2020). Web of Science as a data source for research on scientific and scholarly activity. *Quantitative Science Studies*, 1(1), 363–376. doi: https://doi.org/10.1162/qss_a_00018
- Birzu, S. (2023). Tracing The Evolution Of Digital Marketing From The 1980s, *Review of Management and Economic Engineering*, 22(1), 73-77.
- Bose, C. (2020, January 24). Brief history of digital marketing (1990-2020). Retrieved May 18, 2023, From <https://webcentral.au/blog/brief-history-of-digital-marketing-1990-2020/>.
- Boardhurst, M. (2022). How Businesses of Any Size Can Use AI in a Digital Marketing Strategy, *Applied Marketing Analytics*, 8(2), 122 – 132. <https://d74ec2d6f7db4603480eca467de32d3f06478210.vetisonline.com/record/display.uri?eid=2-s2.0-85143616387&origin=inward&txGid=991b16a67fcd73ba6b44749eab80860d>.
- Clarivate. (n.d.). Streamline your research. www.clarivate.com. Retrieved May 19, 2023, From: <https://clarivate.com/products/scientific-and-academic-research/research-discovery-and-workflow-solutions/webofscience-platform/>.
- Clarivate Analytics. (2016, January 3). Acquisition of the Thomson Reuters Intellectual Property and Science Business by Onex and Baring Asia Completed. Retrieved May 19, 2023, From: <https://www.prnewswire.com/news-releases/acquisition-of-the-thomson-reuters-intellectual-property-and-science-business-by-onex-and-baring-asia-completed-300337402.html>.
- Deighton, J., & Kornfeld, L. (2009). Interactivity's unanticipated consequences for marketers and marketing. *Journal of Interactive Marketing*, 23(1), 4-10.
- Dou, W., & Chou, D. C. (2002). A structural analysis of business-to-business digital markets. *Industrial marketing management*, 31(2), 165-176.
- Dölek, A.N. (2015, October 09). Web of Science nedir? Retrieved May 18, 2023, From: https://portal.dpu.edu.tr/ayseur.dolek/makale_oku/72/web-of-science-nedir.
- Esch, P. V. & Black, J. S. (2021). Artificial Intelligence (AI): Revolutionizing Digital Marketing, *Australasian Marketing Journal*, 29(3), <https://doi.org/10.1177/183933492111037684>.
- Gao, L., Li, G., Tsai, F., Gao, C., Zhu, M., & Qu, X. (2023). The impact of artificial intelligence stimuli on customer engagement and value co-creation: the moderating role of customer ability readiness. *Journal of Research in Interactive Marketing*, 17(2), 317-333.
- Goel, N. (2022). A Brief Overview of Digital Marketing, *International Journal of Recent Advances in*

- Multidisciplinary Topics*, 3(7), 10-12, <https://journal.ijramt.com/index.php/ijramt/article/view/2247/2184>.
- Howes, C., & Mailloux, M. (1999). *Using e-mail web-based technology to survey your current student population*. In American Marketing Association. LA: *Symposium for the Marketing of Higher Education*. New Orleans.
- Joshi, N. (2021). *3 Technologies Every Digital Marketer Should Use*. Retrieved May 18, 2023, From <https://www.bntimes.com/technology/3-technologies-every-digital-marketer-should-use>,
- Le, D., Nguyen, T. M., Quach, S., Thaichon, P. & Ratten, V. (2021). *The Development and Current Trends of Digital Marketing and Relationship Marketing Research (Chapter-1)*, 1-18, *Developing Digital Marketing: Relationship Perspectives*, Ed. By: Thaichon and Ratten, Emerald Publishing, 1.st ed., U.K.
- Maltz, E. And Chiappetta, V. (2002). *Maximizing value in the digital world*. *MIT Sloan Management Review*, 43(3), 77.
- Musova, Z., & Poliacikova, E. (2018). *Consumers' Perception of Digital Marketing Tools*. In *Proceedings of the 15th Annual International Scientific Conference on Marketing Identity-Digital Mirrors*.
- Nair, K. & Gupta, R. (2020). *Application of AI Technology in Modern Digital Marketing Environment*, *World Journal of Entrepreneurship, Management, and Sustainable Development*, 17(3), 318-328. <https://doi.org/10.1108/WJEMSD-08-2020-0099>.
- Nwachukwu, D., & Affen, M. P. (2023). *Artificial intelligence marketing practices: The way forward to better customer experience management in Africa (Systematic Literature Review)*. *International Academy Journal of Management, Marketing and Entrepreneurial Studies*, 9(2), 44-62.
- Oikle, J. (1997). *The power of e-mail marketing*. *Intrepid Net Marketing*.
- Okat, Ö., & KADİRHAN, K. (2020). *ARTIFICIAL INTELLIGENCE-ASSISTED PROGRAMMATIC ADVERTISING*. *New Communication Approaches in the Digitalized World*, 87.
- Rowley, J. (2008). *Understanding digital content marketing*. *Journal of marketing management*, 24(5-6), 517-540.
- Ryan D. & Jones C. (2014). *The Best Digital Marketing Campaigns in The World II*, 2.ed., USA, Kogan Page Ltd.
- Ryu, J. S. (2015, July). *Digital Marketing of Cotton to Generation Y College Students*. In *KODISA ICBE, International Conference on Business and Economics*.
- Shah, R. (2020). *Introduction to Digital Marketing: Understanding & Mastering the Digital Marketing Basics*. Retrieved May 17, 2023, From <https://2stallions.com/blog/introduction-to-digitalmarketing/>.
- Sokolova, N. G., & Titova, O. V. (2019, May). *Digital marketing as a type: concept, tools, and effects*. In *1st International Scientific Conference "Modern Management Trends and the Digital Economy: From Regional Development to Global Economic Growth"*.
- Strauss, L. (2023). *What is AI marketing—and how can you leverage it?* Retrieved May 17, 2023, From <https://zapier.com/blog/ai-marketing/>.
- Tchelidze, L. (2019). *Potential and skill requirements of artificial intelligence in digital marketing*. *Calitatea*, 20(S3), 73-78.
- Uyan, G. (April 17, 2023). *KitKat'tan Yapay Zekâ Modelleriyle Dalga Geçen Reklam Kampanyası [Video]*. Retrieved May 19, 2023 From: <https://www.webtekno.com/kitkat-yapay-zeka-reklam-video-h133843.html>.
- Wirth, N. (2018). *Hello marketing, what can artificial intelligence help you with?*. *International Journal of Market Research*, 60(5), 435-438.
- www.mynet.com. (2022, December 12). *ChatGPT kimin, OpenAI'yi kim kurdu? OpenAI ChatGPT yapay zekâ botu kim tarafından geliştirildi, sahibi kim?* Retrieved May 19, 2023 From <https://www.mynet.com/chatgpt-kimin-openai-chatgpt-yapay-zeka-botu-kim-tarafindan-gelistirildi-sahibi-kim-110107078684>.
- Yaiprasert, C. & Hidayanto, A. N. (2023). *AI-Driven Ensemble Three Machine Learning to Enhance Digital*

Marketing Strategies in the Food Delivery Business, Intelligent Systems with Applications,
<https://doi.org/10.1016/j.iswa.2023.200235>.