The Relationship Between Taking Initiative Through Work Engagement and Uncertainty Management: A Moderated Mediation Model of Career Planning

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Abstract

This research aims to determine the moderated mediation effect of career planning in the indirect relationship between taking personal initiative through work engagement and uncertainty management. For the research to be generalized to the universe, some educational managers close to the maximum sampling was been reached. For this purpose, since the education managers working in the central districts in the province of Mersin show a homogeneous distribution, it was decided how many education managers should be selected by dividing them into clusters. After this decision, schools were converted into sampling units by a simple random sampling method, and education managers were reached face-to-face. Ready-made measurement tools were used in the research. For this reason, the goodness of fit values and reliability coefficients of each of the measurement tools used have been calculated. A significant relationship between taking initiative, integration with work, career planning, and uncertainty management was found throughout the research. According to education managers, work engagement mediates the relationship between initiative-taking and uncertainty management. The level of relationship between work engagement and uncertainty management is also increasing in education managers who can make career planning decently. In addition, there is a moderated mediation effect of career planning in the indirect relationship between taking initiative mediated by work engagement and uncertainty management. In other words, an education manager with career planning can also be successful in taking initiative and managing uncertainty through work engagement.

Keywords: Uncertainty, Management, Career, Planning, Work, Engagement, Initiative, Moderated Mediation Effect.

Introduction

Educational institutions are organizations that have to operate in a constantly changing and uncertain environment (Walker et al., 2023; Varlık, 2022). These uncertainties can arise in a wide range from pedagogical methods to technological developments, from educational policies to economic factors (Lee et al., 2021). Educational institutions have to focus on uncertainty management to cope with this dynamic environment and provide an effective educational process (Chang et al., 2022; Tourish & Hargie, 2004). Uncertainty management is a strategic approach that allows educational institutions to adapt to changing conditions and cope with unexpected situations (Zámborský et al., 2022). This includes gaining flexibility in the face of unpredictable events, developing the ability to make quick decisions, and effectively managing resources (Bradac, 2001; Stewart, 2020). Furthermore, educational institutions should promote effective communication and increase cooperation between teachers, administrators, and other stakeholders to cope with uncertainty (Kotenko et al., 2022). On the other hand, factors such as technological developments, changes in student profiles, and economic fluctuations may increase uncertainty for educational institutions. For this reason, education managers should constantly apply knowledge and skill development strategies and integrate them with their jobs to adapt quickly to changing conditions (Otley & Soin, 2014). An education manager who works engagement can spend a lot of effort to optimize business processes in educational institutions, create an effective management model, and help the institution achieve its goals (Bakker, 2022). This kind of education manager adopts the vision of managing educational institutions in a more efficient, effective, and sustainable way

(Filipovic et al., 2023; Torrente et al., 2012). Moreover, it directs decision-making processes in educational institutions in a data-oriented manner and aims to achieve strategic goals by following performance indicators (Bakker et al., 2003). On the other hand, an education manager whose work engagement creates an effective culture of cooperation between teachers and administrative staff (Mazzetti et al., 2023), regulates business processes and strengthens the determination of the institution by optimally using resources (Aboramadan et al., 2020). However, it develops strategies to help educational institutions adapt to changing Sunday conditions, technological developments, and social needs. As in the business world, it focuses on continuous improvement to succeed in a competitive educational environment (Kovjanic et al, 2013) and adopts innovative solutions that carry its institution into the future (Imperatori, 2017). Nowadays, it is expected that the education manager will have the ability to take initiative as well as uncertainty management and work engagement (Varlık, 2022). An education manager who takes the initiative assumes an important role that encourages effective leadership and success in educational institutions (Tekin & Akın, 2021). This type of manager has a pioneering perspective (Daniels et al., 2011), and creates an important impact in moving educational institutions to the future by acting proactively (Yalçınkaya et al, 2021). Moreover, when faced with various challenges, it generates new ideas (Staw & Sutton, 2001), develops innovative solutions (Lisbona et al., 2021), and creates guidelines to continuously improve the learning environment (Hakenen et al., 2008). However, it develops effective strategies to maximize the potential of educational institutions (Ikhide & Ogunmokun, 2023) and encourages team members to implement these strategies (Jaramillo et al., 2007). An education manager who takes the initiative creates a team spirit by communicating effectively with teachers, administrative staff, and other stakeholders (Gamboa et al., 2009) and supports the culture of working together (De Clercq & Mustafa, 2023). In addition, by following the current developments in areas such as educational technologies, pedagogy, and student needs (Frese, 2001), it determines strategies to continuously improve the educational quality of its institution (Rank et al., 2004). At the same time, it promotes diversity and equality in education (De Dreu & Nauta, 2009). This leadership approach aims to provide an education that is appropriate for students' different learning styles and needs (Boline & Turnley, 2005). On the other hand, it continues its efforts to constantly renew and strengthen educational institutions to increase student achievement and provide better services to society (Redfern et al., 2010). For this reason, an education manager who can take initiative should also make individual career planning on

behalf of education management. Because an education manager who does career planning assumes a critical role in supporting the professional development of personnel in educational institutions (Jackson & Tomlinson, 2020) to ensure that individuals achieve their career goals (Şimşek & Çelik, 2008). This type of leadership approach helps teachers, administrative staff, and other employees identify their abilities (Veronica et al., 2020), emphasizes their strengths, and supports their personal and professional development by determining their career goals (Eroğlu & Eroğlu, 2020). In the continuation, it directs individuals to appropriate educational programs by taking into account their education and experience (Can et al., 2012). In this process, teachers are encouraged to improve their teaching skills, managers to increase their leadership abilities, and other personnel are encouraged to take the necessary steps to achieve their career goals (Chang & Lee, 2023). An education manager who makes career planning determines strategies for developing the abilities and skills of personnel by the long-term goals of the educational institution (Şimşek & Soysal, 2004). In addition, it is recommended that teachers try different educational methods (Soysal, 2007), adapt to new technologies (Litynska et al., 2023), and strengthen the talent pool within the organization by supporting their promotion to leadership positions (Trăistaru, 2020). However, it encourages mentoring relationships between individuals and supports the creation of professional networks (Antoniu, 2010). In this way, education employees learn from each other, and share their experiences, and a cooperation culture is created within the institution (Çalık & Eriş, 2006). Based on this, the relationship between the concepts of "uncertainty management, work engagement, taking the initiative, and career planning", which are important from the point of view of educational institutions and educational management, should be revealed and modeled. Work engagement is the strengthening of relationships between different functions, units, or processes of an organization (Mäkikangas et al., 2022) and it is a strategy implemented to bring them together more effectively (Wood et al., 2020). Taking initiative, on the other hand, refers to the ability to take leadership or responsibility in a particular situation (Fay & Frese, 2001). Taking initiative is usually associated with the ability to cope with uncertainty and adapt to changing conditions (Searle, 2008). Through work engagement, it is aimed at increasing communication and cooperation between different units within the organization (Bakker & Schaufeli, 2008; Freeney & Tierman, 2006). This can increase the overall effectiveness of the organization (Aboramadan, 2022) and strengthen the ability to cope with uncertainty (Monje-Amor et al., 2021). Work engagement can increase knowledge sharing (Chaudhary et al., 2012;

Zhu et al., 2009), can ensure more effective use of resources (Fu et al., 2021), and can help the organization achieve its goals more effectively. Education managers who work engagement can have a significant impact on uncertainty management (Wang & Chen, 2020), and career planning can play a moderator role in increasing or decreasing this situation (Mingze, 2021). Business integration refers to the harmonious functioning of different departments, functions, and processes within an organization (Hoigaard et al., 2012). Education managers, as the people who manage and develop education processes within the organization, are the focus of this integration (Chen et al., 2020). This situation may strengthen the regulatory role of career planning of education managers (Dundar, 2013). Because these managers are in a position of strategic importance to better manage the uncertainties within the organization and to support the career development of employees (Turhan & Karabatak, 2015). By playing an effective role in business integration and uncertainty management, education managers can support both their career development and the overall success of the organization. There may be a complex relationship decoupling between taking personal initiative, work engagement, and uncertainty management. The interactions between these processes can affect the career planning of education managers (Tunçer, 2012). Taking personal initiative means that the individual takes responsibility on his own (Kılıç, 2021), acts proactively and actively participates in business processes (Binneyies & Sonnentag, 2007). Integration with work refers to the integration of the individual into the business environment (Schaufeli & De Witte, 2017). An education manager who is integrated with work adapts to education and school culture and participates effectively in business processes (Wang & Chen, 2020). On the other hand, uncertainty is an inevitable situation in all organizations (Ham et al., 2020). Changes in the business environment, rapid developments, and uncertainty are a constant reality for organizations (Lin et al., 2011). Therefore, the ability of education managers to cope with uncertainty can indirectly affect their initiative through integration with work. In other words, taking personal initiative (Taris & Wielenga-Mejer, 2010) can increase the integration of the education manager with the job (Chaudhary et al., 2012). A proactive attitude can help to adapt to changes within the training organization faster by ensuring more effective participation in business processes (Bakker & Bal, 2010). A work-engaged education manager can better cope with uncertainty (He et al., 2008). Because employees who are integrated with work are more connected to the goals of the organization (Kong, 2009) and can adapt to changes more flexibly (Mache et al., 2014). However, taking personal initiative (Utsch & Rauch, 2000) is also an important element

for an individual's career planning (Zhou, 2022). A proactive approach can provide an advantage in achieving an individual's career goals (Albrecht, 2010). Uncertainty management skills can strengthen an individual's ability to cope with uncertain situations that he may encounter in his career (Turcanu et al., 2020). In short, the relationship between taking personal initiative, work engagement, and uncertainty management may be influenced by an individual's career planning. A proactive attitude can increase an individual's ability to cope with uncertainty by ensuring more effective participation in business processes, and therefore affect career success.

Research Problem

The main purpose of this research is to determine the role of moderated mediation of career planning in the indirect relationship between personal initiative taking and uncertainty management through work engagement. In the related literature, these concepts, which are important for educational institutions and educational administrators, were considered individually and were not analyzed by combining them all with a complex model. Uncertainty management (Carriero et al., 2018; Filipovic et al., 2023; Jairaman et al., 2017; Kruzel & Byland, 2022), work engagement (Aboramadan, 2022; Bakker, 2022; Lai et al., 2020; Mäkikangas et al., 2022; Mazzetti et al., 2023), taking initiative (De Clercq & Mustafa, 2023; Ikhide & Ogunmokun, 2023; Lisbona et al., 2021), career planning (Eroğlu & Eroğlu, 2020; Jackson & Tomlinson, 2020; Litynska et al., 2023) were been tried to be put forward with simple theoretical models in the research conducted on. This situation has created a gap in the relevant literature. Filling this gap is also the main purpose of this research. However, simple theoretical models may not be able to fully explain the causal relationships between variables in social sciences (Adams & Mcguire, 2023; Hayes, 2018). This also applies to simple mediation and simple moderation models (Blair et al., 2023). Therefore, the expression of variables with complex models is important in terms of revealing the subject in depth. In this case, complex situational mediation models consisting of a combination of both simple and mediation models come into play (Crano et al., 2023; Hayes, 2018). By deciphering this complex model, these inter-conceptual relations will shed light on the relevant literature along with their results, practical, and theoretical conclusions, and suggestions. In addition, integration with work is expected to improve the education system continuously (Van Den Broeck et al., 2008), providing students with opportunities to integrate more effectively into the business world (Houdmont & Leka, 2010) and adapting quickly to changing needs in the business world, the relationship between taking initiative

and uncertainty management, which will increase the sustainability of educational institutions, will be deciphered (Filipovic et al., 2023). Moreover, in the model, education managers will be resolved in a moderated mediation that will increase and decrease their informed decision-making about determining, developing, and managing future career paths. It will be revealed that uncertainty management, integration with work, taking initiative, and career planning are important for decision-makers to train education managers, prepare graduate programs, and train them with in-service training. In this way, the gap in the field will be filled. In addition, it will provide detailed guidance to educational administrators, teachers, and decision-makers.

METHODOLOGY

Research Design

The statistical model of the research was based on the relational and descriptive screening model; the conceptual model of the research was based on Hayes (2018) "Model XIV". The conceptual model of the research is given in Figure 1

The statistical and conceptual model of the research was carried out based on the functional paradigm. The basic thing in the functional paradigm is that the measurement tools are prepared and presented to the participants in advance (Gunbayi & Sorm, 2020). Screening models also aim to collect the attitudes and thoughts of the participants of the study with pre-prepared measurement tools (Cohen et al., 2018; Johnson & Christensen, 2020). The conceptual model of the research shows that it depends on the education manager to take initiative through integration with work to manage uncertainty and to make individual career planning with this indirect effect. Hypotheses related to the research model are given below.

H_1= There is a relationship between taking initiative, work engagement, career planning, and uncertainty management.

H_2= Work engagement has a mediation role in the relationship between personal initiative taking and uncertainty management.

H_3= Individual career planning has a moderation role in the relationship between work engagement and uncertainty management.

H_4= There is a role of career planning as a moderated mediation in the indirect relationship between taking personal initiative through work engagement and uncertainty management.

Sampling

The study universe of this research consists of education managers working in official public schools in Akdeniz, Mezitli, Toroslar, and Yenişehir districts of Mersin province, Turkey. The total number of education administrators was determined as N=913 when taken from the relevant official unit. To determine the sample volume .95 confidence level, it was calculated that n=271± education managers should be included in the study at the .05 significance level (Denscombe, 2020). The education managers working in the three districts where the research was conducted have a homogeneous structure. Therefore, the education manager coefficient falling into clusters was calculated by cluster sampling. Accordingly, the cluster coefficient of .297 has been found. According to the clusters, a minimum of n=98+ education administrators from the Akdeniz district, a minimum of n=45+ education administrators from the Mezitli district, a minimum of n=83+ education administrators from the Toroslar district, and a minimum of n=45+ education administrators from Yenişehir district should be included in the research. As a sample unit, the schools where education managers work were determined. The education administrators in the determined schools were selected by a simple random sampling method. According to the return numbers of the questionnaires completed voluntarily, the research was completed with a total of n=379 education managers. Since this number is close to the maximum number of samples, we can call the whole education managers universe a generalizable mini-universe for quantitative research (Creswell & Guetterman, 2019; Loehlin & Beaujean, 2017; Stockemer, 2019). The gender distribution of the education managers participating
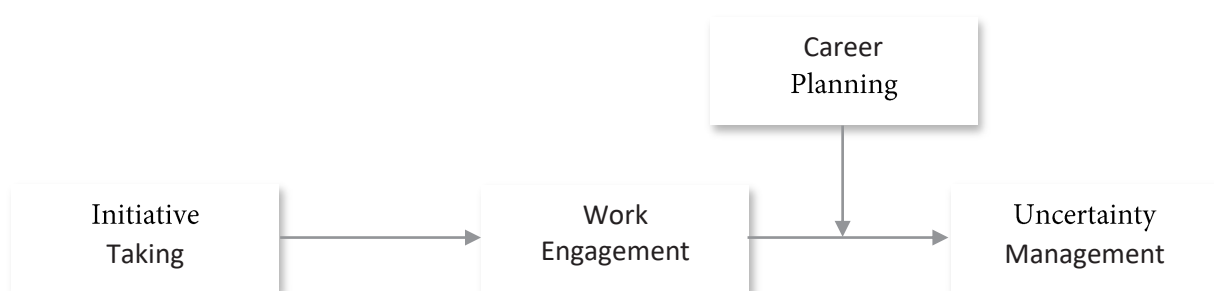

Fig. 1 : The conceptual model of the **research**

in the study was 22.4% (n=85) "female"77.6% (n=294) "male"; the age distribution was 33.8% (n=128) "<=35 years" 35.9% (n=136) "36-45 years" 30.3% (n=115) "46+ years"; occupational seniority distributions are 33.5% (n=127) "1-9 years"43.5% (n=165) "10-19 years" 23.0% (n=87) "20+ years".

Data Collection Tools

The data of the research were collected face-to-face by taking the necessary appointments with the measurement tools "Uncertainty Management" developed by Mazlum (2019), "Work Engagement" developed by Schaufeli, Bakker, and Salanova (2006), "Personal Initiative Taking" developed by Akin (2012), "Career Planning" developed by Aydın (2010). All items in the measurement tools consist of positive statements. The researchers who developed the measurement tools conducted exploratory factor analyses for each measurement tool. Since the measurement tools were used readily in this research, confirmatory factor analysis was performed to confirm its validity. The study did not collect pilot data because the scale was not developed. Therefore, the verification of the scales was carried out through the application data. In addition, the application data were collected personally face-to-face by the researcher. In this way, it was checked by the researcher whether theoretical and practical criticisms related to measurement tools would affect the research. After the measurement tools were applied, a confirmatory factor analysis was performed regarding their validity, and the model fit values are presented in Table 1.

When the fit indices and model fit results related to the measurement tools were examined in Table 1, the values of both independent and saturated models turned out to be lower than the recommended main model value. This shows that the fit indices are sufficient to be used (Collier, 2020). Cronbach's (α) coefficients were calculated for the reliability of the measurement tools. According to the alpha coefficients, we can say that the internal consistency of the measurement tools used in the research is high (Okoko et al., 2023; Zou & Xu, 2023).

Analysis of the Data

AMOS 23 for confirmatory factor analysis model fit results and multivariate normality coefficient, SPSS 25 for descriptive, inferential statistics and single normality distributions, and PROCESS MACRO 4.1 package programs for simple mediation, moderation, and moderated mediation models were used in the research. The Mardia coefficient for multivariate normality was found to be 4.326. This value can be expressed as a sign that the multivariate normal distribution of the data is (Byrne, 2016; Creswell & Creswell, 2018). On the other hand, the one-variable normal distribution kurtosis value and skew value for each variable remained below ±2.58. This value has shown that the variables are also distributed normally in the singular (Tabachnick & Fidel, 2013; Yu, 2022). Correlation analysis is a test statistic that shows the direction and severity of the relationship between two variables (Howitt & Cramer, 2017; Young, 2017). In the research, correlation analysis was performed between the variables of uncertainty management, work engagement, career planning, and initiative-taking. Endogenous and exogenous variables were coded as "X=Taking Initiative, M= Work Engagement, W=Career Planning, Y=Uncertainty Management" in the research. Accordingly, the moderated mediation effect shows that the indirect effect of X on Y through M occurs if it depends on the variable W (Hayes, 2018; Kline, 2016).

FINDINGS

The results of correlation analysis in the research are given in Table (H_1), an analysis of the mediation role of work engagement in Table 2 (H_2), an analysis of the moderation role of career planning in Table 3 (H_3), an analysis of the moderated mediation role of career planning in the indirect effect of work engagement in Table 5 (H_4).

According to the correlation analysis results in Table 2, there is a positive and statistically significant relationship between uncertainty management and initiative taking (r=,639), between work engagement (r=,574), career planning (r=,518); between initiative taking and work engagement (r=,587), between career planning (r=,540); between work

Table 1: Compliance Indices of Measurement Tools, Model Compliance, and Cronbach's Alpha Results

Compliance Indices	CMIN / SD	p	CFI	RMSEA	GFI	RMR	Cronbach's α
UM	1,502	,223	,999	,036	,996	,013	,839
WE	2,085	,124	,998	,054	,994	,008	,872
PIT	1,537	,215	,999	,038	,995	,011	,846
CP	2,282	,077	,995	,058	,992	,019	,772

Notes: "UM"- Uncertainty Management, "WE"- Work Engagement, "PIT"- Personal Initiative Taking, "CP"- Career Planning.

engagement and career planning (r=,438). There is a positive and statistically significant relationship between uncertainty management and initiative-taking (r=,639), and between work engagement and career planning (r=,438). In other words, from the point of view of educational administrators, an increase that may occur in one of these variables will also increase other variables. In light of these findings, "H_1= *There is a relationship between taking initiative, work engagement, career planning, and uncertainty management.*" the hypothesis is supported by.

According to the results of the analysis in Table 3, taking personal initiative affects work engagement [β=,719, 95% CI (,619-,819) p<.001]. This effect explains 34.5% of work engagement through personal initiative (R^2=345). On the other hand, personal initiative taking, [β=,559,95% CI (,448-,669) p<.001] work engagement [β=,300 95% CI (,210-,391), p<.001] uncertainty affects management. This effect explains 46.8% of uncertainty management (R^2=,468). When the intermediary effect was examined in the model, it was found that the role of work engagement has a mediation role in the relationship between personal initiative taking and uncertainty management [β=,216, 95% CI (,152-,287) p<.001]. In light of these findings, "H_2=*Work engagement has a mediation role in the relationship between personal initiative taking and uncertainty management.*" the hypothesis is supported.

According to the results of the analysis of the regulatory role in Table 4, work engagement [β=,404, 95% CI (,318-,489)

p<.001] individual career planning [β=,292,95% CI (,208-,376) p<.001] uncertainty effects management. This effect explains 43.0% of uncertainty management with work engagement and individual career planning (R^2=430). On the other hand, WE*CP, which is included in the model as an interactional term, together affects uncertainty management [β=,229, 95% CI (,074-,384) p<.001]. This effect adds 1.28% R^2 to the model (R^2=,0128). When the regulatory effect of the model was examined, it was found that there is a regulatory effect of individual career planning in the relationship between job integration and uncertainty management. In light of these findings, "H_3=*Individual career planning has a moderation role in the relationship between work engagement and uncertainty management.*" the hypothesis is supported. In the case of low, middle, and high individual career planning in education managers, the declivity graph of the relationship between work engagement and uncertainty management has been drawn and is given in Figure 2.

When the slope graph of moderation effects is examined in Figure 2, the relationship between work engagement and uncertainty management is significant in cases where individual career planning is low [β=,297, 95% CI (,177-,418) p<.001]. In cases where individual career planning is moderate, the relationship between work engagement and uncertainty management is significant [β=,404, 95% CI (, 318-,489) p<.001]. On the other hand, the relationship between work engagement and uncertainty management is significant in cases where individual career planning is

Table 2: Correlation Analysis Results

Variables	UM	PIT	WE	CP	M	SD
Uncertainty Management	1	-	-	-	4,24	,447
Personal Initiative Taking	,639**	1	-	-	4,33	,369
Work Engagement	,574**	,587**	1	-	4,31	,452
Career Planning	,518**	,540**	,438	1	4,30	,464

Notes: *p<.05; **p<.01; ***p<.001 n=379. "UM"- Uncertainty Management, "WE"- Work Engagement, "PIT"- Personal Initiative Taking, "CP"- Career Planning

Table 3: The Results of the Analysis Related to the Mediation Role

Variables	Work Engagement			Uncertainty Management		
	β	LLCI	ULCI	β	LLCI	ULCI
Initiative Taking	,719***	,619	,819	,559***	,448	,669
Work Engagement	-	-	-	,300***	,210	,391
R^2	,345			,468		
Bootstrap Indirect Effect	PIT→ WE→ UM					
	β=,216 %95 BCA CI [,149-,285]					

Notes: *p<.05; **p <.01; ***p<.001 n=379. UM"- Uncertainty Management, "WE"- Work Engagement, "PIT"- Personal Initiative Taking, "CP"- Career Planning

high [β=,510, 95% CI (,408-,612) p<.001]. However, when the slope graph is carefully examined, the relationship level increases gradually to low, middle, and high, and increases to 51.0% when it is high. This finding shows the importance of individual career planning from the point of view of educational managers in the model related to moderation effects. In other words, education managers' career planning, work engagement, and uncertainty management strengthen the relationship level.

According to the analysis results of the moderated mediation effect in Table 5, personal initiative taking improved work engagement [β=,719, 95% CI (,619-,819), p<.001] and uncertainty management [β=,437,95% CI (,319-,555), p<.001] is affecting. On the other hand, work engagement [β=,255,95% CI (,166-,345), p<.001] and individual career planning [β=,178,95% CI (,194-,263), p<.001] uncertainty affects management. It was found significant in the interactional term in the model [β=,155,95% CI (,008-,302), p<.001].

The determination coefficient of the model explains 50.1% of the model (R^2=,501). On the other hand, the situational mediation index of the model was found to be significant [β=,111, 95% CI (,003-,223), p<.001]. Moderated mediation refers to a situation in which the strength or direction of a mediation effect is contingent upon the level of a third variable, known as the moderator. The moderated mediation index is a statistical tool used to assess the extent to which the indirect effect of an independent variable on a dependent variable through a mediator is influenced by a moderator variable. This index is proof that the established model is important. In light of these findings, " H_4= *Career planning has a moderated mediation role in the indirect relationship between taking personal initiative through work engagement and uncertainty management.*" the hypothesis is supported.
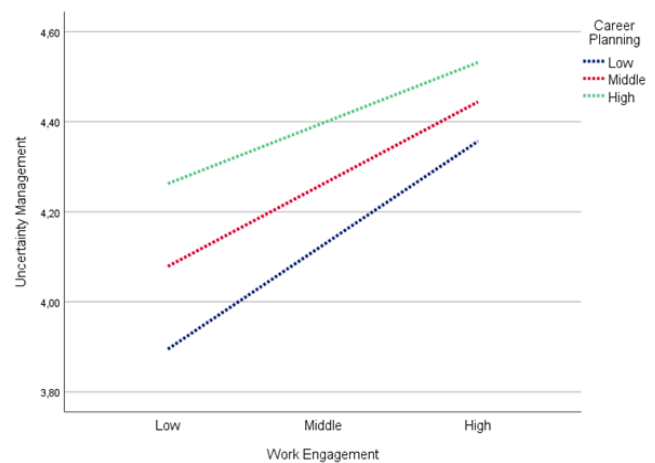
Table 4: The Results of the Analysis Related to the Moderation Role

Variables	Uncertainty Management		
	β	LLCI	ULCI
Work Engagement	,404***	,318	,489
Career Planning	,292***	,208	,376
WE*CP (Interaction)	,229***	,074	,384
R^2	,430		

Notes: *p<.05; **p <.01; ***p<.001 n=379. UM"- Uncertainty Management, "WE"- Work Engagement, "PIT"- Personal Initiative Taking, "CP"- Career Planning

Fig. 2: Slope Graph of Moderation Effects

Table 5: The Results of the Analysis Related to the Moderated Mediation Role

Variables	Work Engagement			Uncertainty Management		
	β	LLCI	ULCI	β	LLCI	ULCI
Initiative Taking	,719**	,619	,819	,437**	,319	,555
Work Engagement	-	-	-	,255**	,166	,345
Career Planning	-	-	-	,178**	,094	,263
WE*CP (Interaction)	-	-	-	,155*	,008	,302
R^2	-			,501		
Indirect Effect	-			-	-	-
Low CP	,183*	,066	,308	-	-	-
Middle CP	,255**	,166	,345	-	-	-
High CP	,328**	,144	,232	-	-	-
MMI	,111**	,003	,223	-	-	-

Notes: *p<.05; **p <.01; *** p<.001 n=379. UM"- Uncertainty Management, "WE"- Work Engagement, "PIT"- Personal Initiative Taking, "CP"- Career Planning, "MMI"-Moderated Mediation Index.
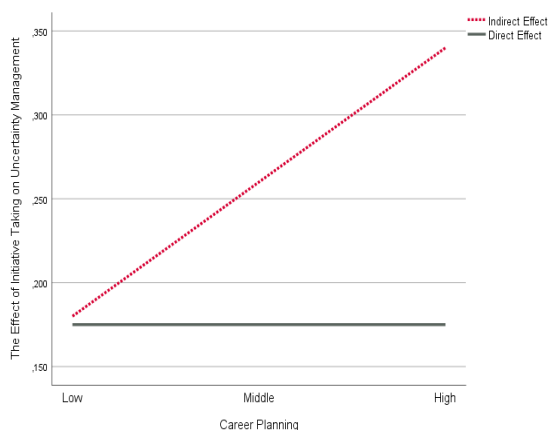
Fig. 3. Graphical representation of the moderated mediation effect

In the case of low, medium, and high individual career planning in education managers, a declivity graph of the indirect relationship between personal initiative taking and uncertainty management through work engagement has been drawn and given in Figure 3.

When the slope graph of moderated mediation effects is examined in Figure 3, the relationship between taking initiative through work engagement and uncertainty management is significant when individual career planning is low indirectly [β=,183,95% CI (,066-,308) p<.001]. Indirectly, the relationship between taking initiative through work engagement and uncertainty management is significant in cases where individual career planning is moderate [β=,255, 95% CI (,166-,345) p<.001]. Indirectly, in cases where individual career planning is high, the relationship between taking initiative through work engagement and uncertainty management is significant [β=,328, 95% CI (,144-,223) p<.001]. The relationship between taking initiative through work engagement and uncertainty management is significant [,328, 95% CI (,144-,223) p<.001]. However, when the slope graph is carefully examined, the relationship level gradually increases to low, middle, and high and increases to 32.8% when it is high. This finding shows the importance of individual career planning for educational managers in the moderated mediation effect model.

DISCUSSIONS

The main purpose of this research is to decipher the role of moderated mediation of career planning in the indirect relationship between personal initiative taking and uncertainty management through work engagement. To search for answers to the hypotheses determined in line with this purpose and to generalize the research results to

the universe, the education manager reached the maximum number of samples. The discussions regarding the findings of the research are given below. In the research, it was been concluded that *"there is a relationship between taking initiative, work engagement, career planning, and uncertainty management"* in educational management. This result shows that the concepts of taking initiative in educational management, work engagement, career planning, and uncertainty management affect each other and are related to each other. This relationship is linear and meaningful. In other words, there is a causal relationship between these concepts (Varlık, 2022). That is, work engagement allows the education manager to have an in-depth understanding of the functioning of the school and its employees (Bakker, 2022). This also helps the education administrator to better understand the needs of the school and make decisions accordingly (Prieto et al., 2008). It also allows the education manager to collaborate effectively with other stakeholders in the school (Fu et al., 2021). Individual career planning, on the other hand, helps the education manager determine his own goals and take the necessary steps to achieve these goals (Chang & Lee, 2023). On the other hand, it contributes to the education manager's better understanding of his role and responsibilities in the school (Veronica et al., 2020). Moreover, it guides how the education manager can contribute to achieving the school's goals (Zhou, 2022). In the research, it was been concluded that *"the education manager who works engagement can take both initiative and manage uncertainty"*. This result shows that work engagement increases the skills of education managers to take initiative and manage uncertainty (Bakker, 2010). Education managers who are well work engagement may have an in-depth understanding of the functioning of the school and its employees (Kong, 2009). This situation can also help education administrators to better understand the needs of the school and make decisions accordingly (Kılıç, 2021). It can also enable education administrators to collaborate effectively with other stakeholders in the school (Hoigaard et al., 2012). Moreover, the existence of such a situation may allow educational managers to develop their skills of taking initiative and managing uncertainty.

In the research, it was been concluded that education managers *"whether or not individual career planning regulates their ability to succeed in uncertainty management through work engagement"*. This result shows that individual career planning decodes the relationship between work engagement and uncertainty management. Education managers who make individual career planning more willing and determined to set their own goals and take the necessary steps to achieve these goals (Wong et al., 2021). This also helps education managers to invest more in the work engagement process (Tekin & Akın,

2021) and to be more proactive in managing uncertainties (Ham et al., 2020). In the research, it was been concluded that *"there is a moderated mediation effect of career planning in the relationship between taking initiative and uncertainty management through work engagement"*. This result shows that career planning mediates in the relationship between taking initiative and uncertainty management through work engagement. That is, career planning strengthens or weakens the effect of work engagement on taking initiative and managing uncertainty (Varlık, 2022). In other words, work engagement improves the initiative-taking and uncertainty-management skills of education managers (Simbule et al., 2011). However, the development of these skills may vary depending on whether education managers make individual career plans (Mingze, 2021). Education managers who make individual career planning can invest more in the integration process with work (Trăistaru, 2020). Such a situation can help education administrators develop a deeper understanding of the functioning of the school and its employees (Jackson & Tomlinson, 2020). In addition, it can contribute to the fact that education managers are more willing and determined to set their own goals and take the necessary steps to achieve these goals (Litynska et al., 2023). As a result, there is an important decoupling between the concepts of taking initiative in education management, work engagement, career planning, and uncertainty management (Varlık, 2022). This relationship can support education administrators to manage the functioning of the school more effectively and ensure that students receive a better education.

THEORETICAL IMPLICATIONS

The theoretical implications of this career planning, taking initiative, managing uncertainty, and integrating with work play an important role are given below.

- It is easier for an education manager who has made individual career planning to take initiative, work engagement and manage uncertainty than classical education managers.
- It is easier for an education manager who can integrate with his job to take initiative and manage uncertainty than classical education managers.
- It is more professional for an education manager who has made individual career planning to take initiative through work engagement and manage uncertainty than classical education managers.

Individual career planning helps the education manager to set his own goals and take the necessary steps to achieve

these goals. In other words, we can say that it is easier for an education manager who makes individual career planning to take initiative, integrate with work, and manage uncertainty than classical education managers. This statement emphasizes that individual career planning increases the professionalism of the education manager. At the same time, it is easier for an education manager who can work engagement to take initiative and manage uncertainty than classical education managers. This statement emphasizes that integration with work increases the professionalism of the education manager. In addition, we can say that it is easier for an education manager who has made individual career planning to take initiative through work engagement and manage uncertainty than classical education managers. This statement combines two statements that individual career planning and work engagement increase the professionalism of the education manager. When all these theoretical inferences are combined, we can conclude that an education manager who has made individual career planning and can work engagement is more professional than classical education managers. Education managers with this condition are more successful in taking initiative, managing uncertainties, and managing the functioning of the school more effectively. In addition, this theoretical inference emphasizes the importance of professionalization of the education management profession. Education managers need to make individual career plans, be able to take initiative, manage uncertainty and work engagement to manage the functioning of the school more effectively, and ensure that students receive a better education.

PRACTICAL IMPLICATIONS

The practical implications that improving the integration of education managers with work and individual career planning will increase their ability to take initiative and manage uncertainty are given below.

- Education managers working in educational institutions may be more qualified to take initiative and manage uncertainty thanks to their work engagement.
- If education managers want to take initiative and manage uncertainty, they need to check whether they can work engagement.
- An education manager who has made individual career planning can work engagement more easily and manage uncertainty more professionally. Because individual career planning assumes the role of a mechanism that increases and decreases work

engagement and uncertainty management in education management.

- If an education manager who makes work engagement a tool for himself has made individual career planning, it is easier for him to take initiative and manage uncertainty.

Work engagement allows the education manager to look at the functioning of the school and its employees with a deep understanding. This can help the education administrator to better understand the needs of the school and make decisions accordingly. It can also enable the education manager to collaborate effectively with other stakeholders in the school. On the other hand, individual career planning can help the education manager set his own goals and take the necessary steps to achieve these goals. This situation can also contribute to a better understanding of the role and responsibilities of the education manager in the school. It can also allow the education manager to determine how the school can contribute to achieving its goals. When all these practical implications are combined, we can say that training managers will improve their integration with work and individual career planning, and increase their ability to take initiative and manage uncertainty. This will also be able to help education administrators manage the functioning of the school more effectively and ensure that students receive a better education.

Limitations and Recommendations

In this research, which aims to determine the role of the moderated mediation of career planning in the indirect relationship between taking personal initiative through work engagement and uncertainty management, limitations have been experienced for reasons such as *"the ability of the sample to represent the universe, the reliability, and validity of measurement tools, research design"*. It was planned to conduct the research throughout Turkey, but due to the principle of time and affordability, the research was limited to the central districts of Mersin province. On the other hand, although it was intended to develop the measurement tools used in the research in terms of reliability and validity of measurement tools in terms of reflecting the essence of education, this has not been realized either. In terms of research design, this research was to be conducted both quantitatively and qualitatively with mixed-method research. However, when concepts such as mediation, regulation, and moderated mediation effect are qualitatively asked of educational managers, this design has been abandoned with the idea that there can be no response. Therefore, the following suggestions have been developed to shed light on future research.

- The mixed method research of initiative-taking, work engagement, uncertainty management, and career planning measurement tools should be updated both with the exploratory sequential pattern, and scale development sub-pattern and developed for educational institutions.

- Research with a different complex model can be conducted quantitatively by adding another variable or variables that also include the variables of taking initiative, job integration, uncertainty management, and career planning; if not working with a complex model, it can be conducted with mixed method research.

- For education managers to become professional, career planning, taking initiative, integration with work, and uncertainty management courses should be included in the program in the graduate or in-service training they will receive.

Conclusion

Based on the findings, discussion, and practical and theoretical conclusions of the research, the following results were reached throughout the research.

- There is a linear and meaningful relationship between the concepts of taking initiative in educational management, integration with work, career planning, and uncertainty management.

- The education manager who works engagement can both take initiative and manage uncertainty.

- The ability of education managers to be successful in managing uncertainty through work engagement depends on whether they make individual career planning.

- Career planning has a moderation mediation effect on the relationship between taking initiative and uncertainty management through work engagement.

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