

Influential Article Review: Key Competencies Involved in Effective Entrepreneurship

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This paper examines entrepreneurship. We present insights from a highly influential paper. Here are the highlights from this paper: The paper has twofold goals. The paper reviews the culture of entrepreneurship and entrepreneurial competencies in Palestine. It is characterized by donor-supported and non-governmental-initiated training. This demands an urgent active involvement of universities in the field of entrepreneurship that is shaped in the form of Research and Development as well as offering entrepreneurship academic programs. This comes in line with the emerging trend of offering courses and programs at universities worldwide. Furthermore, the paper proposes a soft computing-based entrepreneurial key competencies' model (SKECM). This tool is capable of predicting/judging the overall quality of entrepreneurial competencies. SKECM is based on the three-cluster, ten key entrepreneurial competencies developed and used by Empretec. A three-stage, 14 different models have been developed and validated by hundreds of randomly generated datasets. Measures were used to validate the adequacy of these models including, the mean average percentage errors and the maximum percentage errors. The best achieved values for these measures are 0.8511 and 6.3175, respectively. However, although the preliminary findings of the proposed SKECM model are promising, more testing is still required before stating the adequacy of applying the softcomputing modeling approach in the entrepreneurship field (This is to state that there are no financial competing interests (political, personal, religious, ideological, academic, intellectual, commercial, or any other) to declare in relation to this manuscript). For our overseas readers, we then present the insights from this paper in Spanish, French, Portuguese, and German.

Keywords: Entrepreneur, Competencies, Key entrepreneurial competencies, Neurofuzzy, Soft Computing, Modeling, Model

SUMMARY

- The SKECM model has been developed to assess the overall entrepreneurial competency of the various KECs including the overall entrepreneurial competency. A sample of SKECM first stage is as depicted in Fig. 3. To validate the models, datasets have been randomly generated in the range 1.0 to 10.0. That is, a 1.0 to 10.0 scale has been used to assess each EKC and the overall entrepreneurial competency.

- It is assumed that such a scale represents four categories: POOR to cover the range between 1.0 to less than 3.49; SATISFIED to cover the range from 3.5 to less than 7.0; GOOD to represent 7.0 to less than 8.5 range; and EXCELLENT to represent the 7.5 to 10 range.
- For each KEC model, the associated behaviors are given values between 1.0 and 10. The calculated output, the competency of that KCE, is the average of these input values. The soft computing approach has been used to develop such models. Authors of this paper have tried several soft computing techniques. These include neurofuzzy with a hybrid learning algorithm, subtractive clustering, and a combination of the subtractive clustering and the neuro fuzzy approaches. The best results have been obtained by making use of the subtractive clustering and the neuro fuzzy approaches. Thus, all the developed models are based on the combinations of the two approaches.
- Figure 10 presents a sample of the various inputs' values as well as all obtained competencies' values for all 14 developed models, thus covering the stages. Figure 11 illustrates the various obtained MAPE values for all 11 models. The obtained CC values are shown in Fig. 12. The obtained high CC values that range between 0.9964, which corresponds to the persuasion and networking model, and 0.9996 show the adequacy of such models to predict the competencies of the various KECs. The CC measure determines the degree to which two variables' movements, calculated and predicted values, are associated. Moreover, the attained MPE measure values, shown in Fig. 13, are in consistence with the other used measures. The various obtained MPE values range between 1.6374 and 6.3175.

HIGHLY INFLUENTIAL ARTICLE

We used the following article as a basis of our evaluation:

Arafeh, L. (2016). An entrepreneurial key competencies' model. *Journal of Innovation and Entrepreneurship*, 5(1), 1–26.

This is the link to the publisher's website:

<https://innovation-entrepreneurship.springeropen.com/articles/10.1186/s13731-016-0048-6>

INTRODUCTION

Recently, entrepreneurship and entrepreneurial culture have received an increased amount of attention in both academic research and practice. Several initiatives in Palestine are conducting workshops and training sessions to promote the culture of related trends such as the start-ups, innovation, entrepreneurship, and intellectual properties. These are accomplished at high school level like Al-Nayzak (<http://www.alnayzak.org/>) as well as some tertiary education institutions such as the Technology Transfer Company, IBDAAs' (<http://www.ibdaa.ps>), as an example. The Palestinian entrepreneurship status is briefly presented in the "Entrepreneurship status in Palestine" section.

The term entrepreneur has several definitions. These include a person who organizes and manages any enterprise, mainly a business, usually with considerable initiative and risk (<http://dictionary.reference.com/browse/entrepreneur>); someone who exercises initiative by organizing a venture to take benefit of an opportunity and, as the decision maker, decides what, how, and how much of a product or service will be produced (<http://www.businessdictionary.com/definition/entrepreneur.html>); a person who develops a business plan, acquires the human, financial and other required resources, and is responsible for its success or failure (Hisrich 2011); and any individual who organizes and/or manages resources in the form of a self-accounting non-farming enterprise, and assumes a significant amount of risk associated with equity participation in that enterprise (McClelland 1990). These entire definitions share attributes like business, initiative, management, decision making, risk, and the entrepreneurship, on the other hand, may be defined as the capacity required to identify and generate competitive business ideas,

utilize resources, organize production, promote the products or services, manage risks, and continuously work for growth and excellence of the business.

The word competency also has several meanings like sufficiency to satisfy the wants of life (<http://dictionary.reference.com/browse/entrepreneur>); the quality of being adequately or well qualified physically and intellectually (<http://www.thefreedictionary.com/competency>); the capability to apply a set of related knowledge, skills, and abilities to successfully perform functions or tasks in a defined work setting (Entrepreneurship Competency Model 2010); the capacity, which occurs in a person leading to behaviors that meet the job demands within the bounds of organizational environment, which in turn brings about desired results (Boyatzis 1982); and the sum of experiences, knowledge, skills, and attitude which we acquire during our life time for effective performance in a task or job (Kaur and Bains 2013). All of these definitions refer to the competency as a capability/ability that serves as the basis for knowledge and skills standards. It is worth mentioning that competencies apply to all aspects of life including, graduate's competencies, job competencies, managerial competencies, etc. (Mitchelmore and Rowley 2010) and (Linton and Walsh 2013) can be reviewed for further deliberating the meaning of entrepreneurship and competencies.

As for the entrepreneurial competencies, the focus of this paper, reviewing the literature reveals that research papers and articles have addressed those using different terms like characteristics, competencies, traits, and qualities (Entrepreneurship Competency Model 2010; McClelland 1987; David and Edward 2011; Abdullah et al. 2009; Badal 2014; Rozell et al. 2011; Kaur et al. 2013; Brinckmann 2008; Mitchelmore and Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell 2008; Man 2006; James 2011; Anne 2011; Shukla 2009; Wu 2009; Sugars 2014; Prats et al. 2009; The UNCTAD Entrepreneurship Policy Framework 2012; The Empretec Program: The Entrepreneur's Guide 2015; The Canadian National Research Council Entrepreneurship). The number of the quantified competencies ranges from 5 (McClelland 1987; David and Edward 2011; Abdullah et al. 2009; Badal 2014; Rozell et al. 2011) through 7 (Kaur et al. 2013), 10 (Brinckmann 2008; Mitchelmore and Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell 2008; Man 2006; James 2011), 12 (Anne 2011), 13 (McClelland 1987), 15 (Entrepreneurship Competency Model 2010; Shukla 2009), 23 (Wu 2009), and up to 25 (McClelland 1987). Most of them have shared competencies like passionate, risk-taking, confidence, determination, disciplined, visionary, decision-making, and leadership. Furthermore, other researchers categorized competencies into key (or levels/layers/clusters/tiers) entrepreneurial competencies rather than dealing with general individual ones. These proposed key competencies range from 2 to 9 categories (Boyatzis 1982) identified entrepreneurial traits and entrepreneurial motives, whereas (Sugars 2014) realized psychological, and education and experience factors. The three-type category is identified as attitudinal, behavioral, and managerial competencies (Mitchelmore and Rowley 2010); achievement/results—orientation, interpersonal and team-building, and business focus (Prats et al. 2009; The UNCTAD Entrepreneurship Policy Framework 2012); achievement, planning, and power clusters (The Empretec Program: The Entrepreneur's Guide 2015); and personal, interpersonal, and business competencies (The Canadian National Research Council Entrepreneurship and http://www.nrc-cnrc.gc.ca/eng/careers/behavioural_competencies/entrepreneurship_competency.html). The four-category models include: knowledge, motivation, capabilities/qualities, and characteristics (Driessen 2005); and achievement, personal power, planning, and relationship building (Smith and Shankar 2015). The five-level category is proposed by (Sugars 2014) comprising: self-employed mindset, managerial perspective, attitude of owner/leader, entrepreneurial investor, and true entrepreneur. In addition, a six-layer entrepreneurship competency is proposed by (Entrepreneurship Competency Model 2010) including personal effectiveness, academic, work, industry-wide technical, industry-sector technical and management competencies, and occupation-specific requirements. The covariance seven-category structure model is proposed to test the entrepreneurial intent among engineering students at MIT (Lüthjel and Franke 2003). Such a model includes key parameters like entrepreneurial behavior, entrepreneurial intent, risk-taking propensity, locus of control, attitudes towards entrepreneurship, perception of context, and personal background. Furthermore, the nine-tier competencies' model that is proposed by (The Competency Model Development and Use: A Technical Assistance Guide 2015) includes personal effectiveness, academic, workplace, entrepreneurship

technical, entrepreneurial focus areas, and the rest of the tiers represent the specialization that occurs within specific occupations within an industry. All of these categories include components like personal, achievement, planning, power, and academic explicitly or implicitly.

In this paper, the author aims at reviewing the Palestinian entrepreneurship status and various initiatives. The second goal is to propose a softcomputing-based software that can predict the quality of an entrepreneur's overall key entrepreneurial characteristics and competencies. This proposed software is based on the three-cluster model that has been successfully developed and implemented mainly by Empretec (Driessen 2005; Smith and Shankar 2015) in tens of countries all over the world over the three decades.

Following this brief introduction, the paper is organized as follows: the "Literature review" section surveys relevant studies which have addressed the problem of modeling entrepreneurial competencies. The "Methods" section briefly introduces the methodology used. It is followed by a brief presentation of the Palestinian entrepreneurship status. "The proposed model" section introduces the various softcomputing modeling techniques and presents the proposed SKECM model. While results and discussions are covered in the "Results and discussion" section, conclusion and further works are presented in the "Conclusions" section.

CONCLUSION

Palestine has witnessed active entrepreneurship-related initiatives and programs. The main characteristics of these initiatives are donor-based ones that raise the question of sustainability, informal non-governmental organizations-hosted rather than formal universities-offering. The quality of such programs and the quality of obtained entrepreneurship competencies have never been evaluated. The time has come for the Palestinian higher education institutes to follow the emerging trend of offering formal entrepreneurship courses and programs. It is for sure, it will be an essential step to provide a community with entrepreneurs and self-employers who will create jobs and thus boost the economic situation.

A soft computing-based SKECM model has been developed to predict each KEC and clustered competencies depending on their individual associated behaviors that are treated as black boxes. An overall entrepreneurial competencies assessment has also been achieved in the third stage of the SKECM model. The different adopted behaviors, ten KECs, and three clusters are as provided by Empretec. The validation of these models has been accomplished by randomly generating 250 datasets. Using the cross-validation algorithm, the generated datasets have been split into training and checking datasets. Three measures have been used to validate the adequacy and accuracy of such models: MAPE, CC, and MPE. The top obtained MAPE, CC, and MPE values are 0.8511, 0.9996, and 6.3175, respectively. These consistent values suggest the potential, adequacy, and suitability of the soft computing approach to assess and predict the entrepreneurial key competencies and the overall entrepreneurial competencies in the field of entrepreneurship.

The developed SKECM model will be proposed to judge or evaluate the quality of the obtained entrepreneurial competencies from the various running of entrepreneurship training programs.

Thus, the future research study will focus on validating such models against benchmarked realistic data. This step is essential to fine-tune the models before stating the adequacy of applying the soft computing approach to the field of entrepreneurship. In addition, in order to succeed in business, it is essential to integrate the KECs models throughout the business planning process that includes several planning tasks like introduction, description of business, description of products and services, customers, competition, location, pricing, marketing, key personnel, material and sources of supply, manufacturing and production, sales forecast predict profit and loss, forecast cash flow, and presentation. Furthermore, it is worth integrating KECs models with the innovation and business start-ups.

APPENDIX

FIGURE 1
THE THREE-CLUSTER ENTREPRENEUR COMPETENCIES' BLOCK DIAGRAM



FIGURE 2

THE THREE-STAGE SKECM MODEL BLOCK DIAGRAM

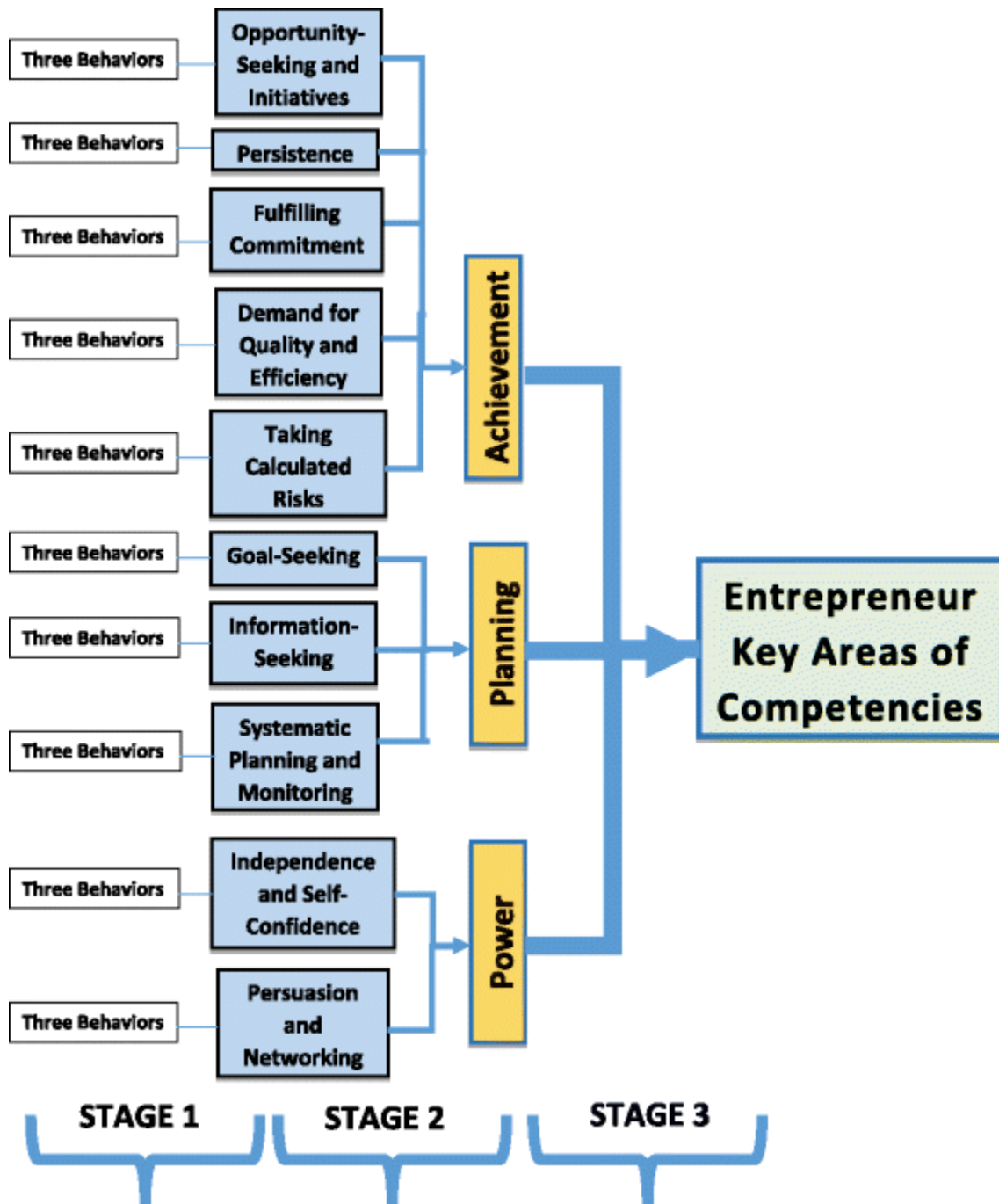
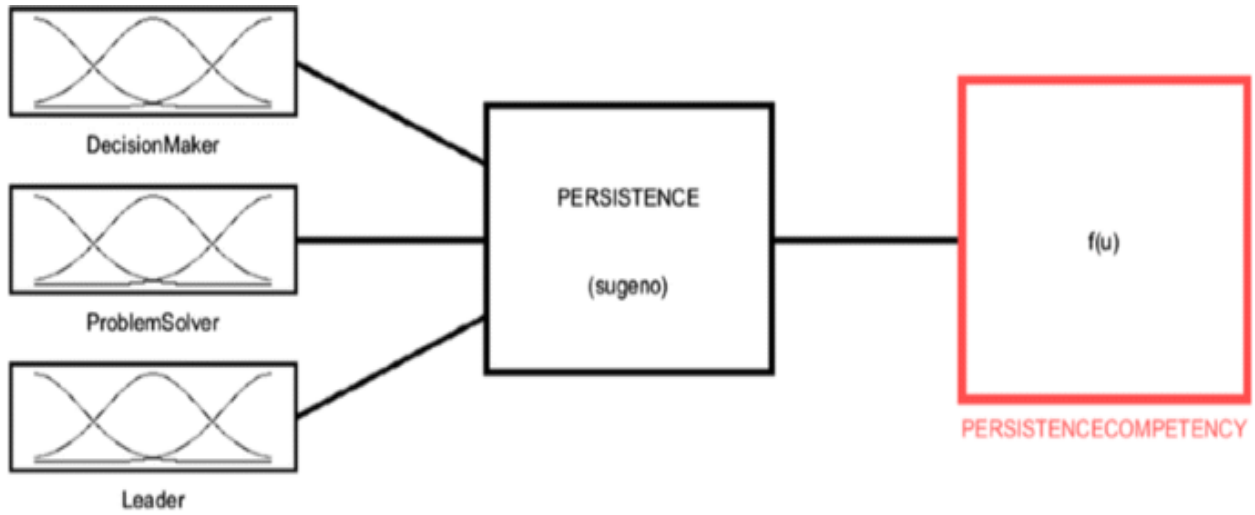
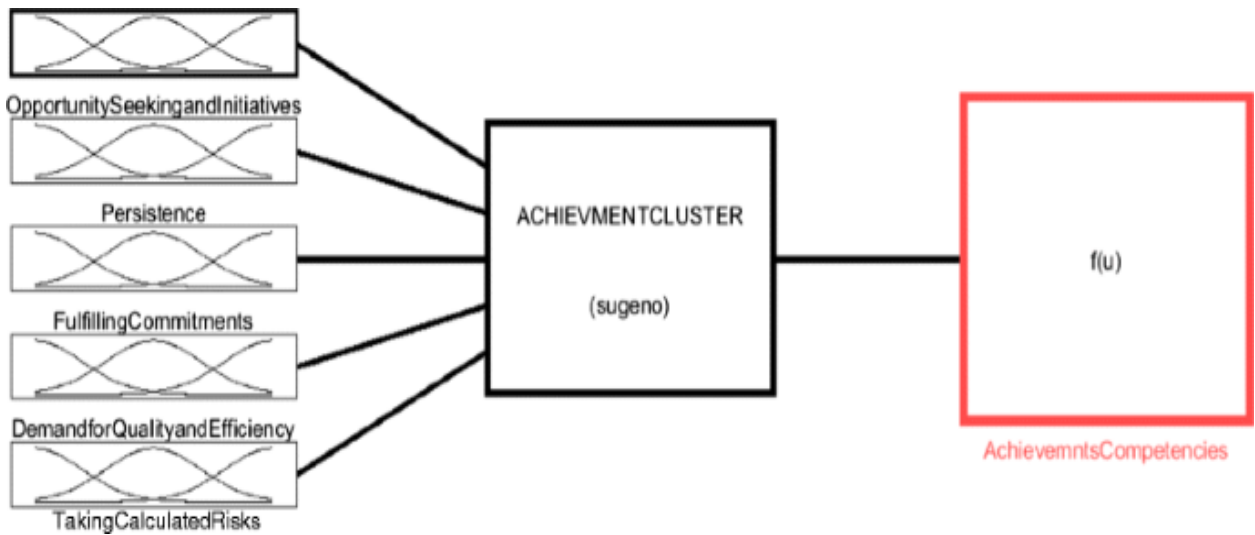


FIGURE 3

THE PERSISTENCE KEY COMPETENCY AND ITS ASSOCIATED BEHAVIORS BLOCK DIAGRAM



**FIGURE 4
THE ACHIEVEMENT CLUSTER AND ITS ASSOCIATED KEY COMPETENCIES BLOCK DIAGRAM**



**FIGURE 5
SKECM ENTREPRENEUR COMPETENCIES' MODEL**

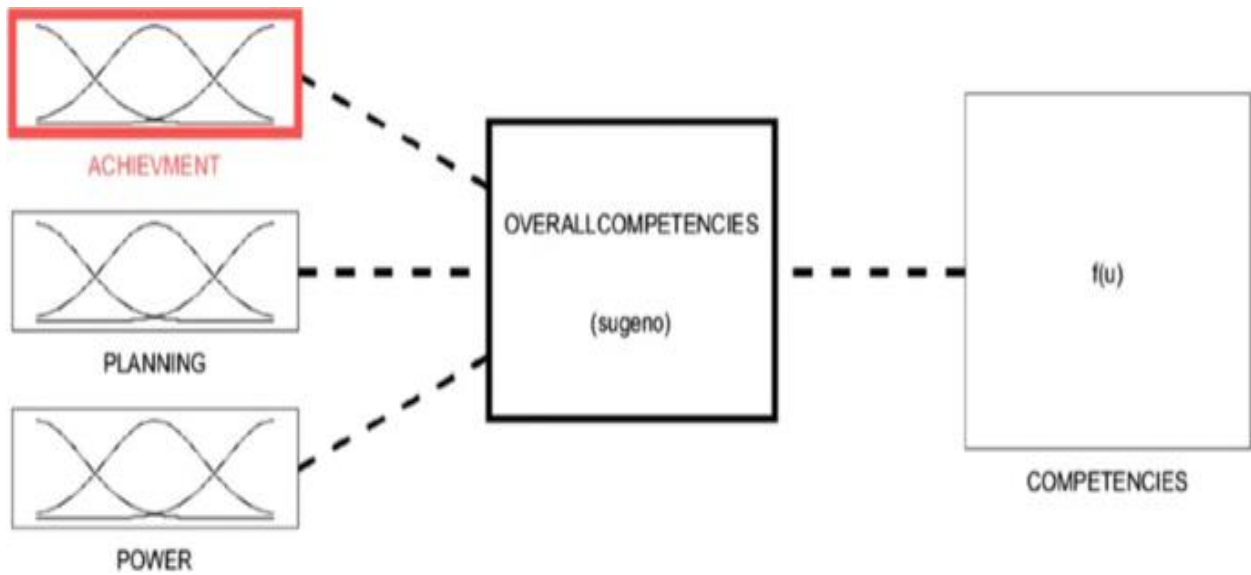


FIGURE 6
CALCULATED VS. PREDICTED ACHIEVEMENT CLUSTER COMPETENCIES' PLOTS

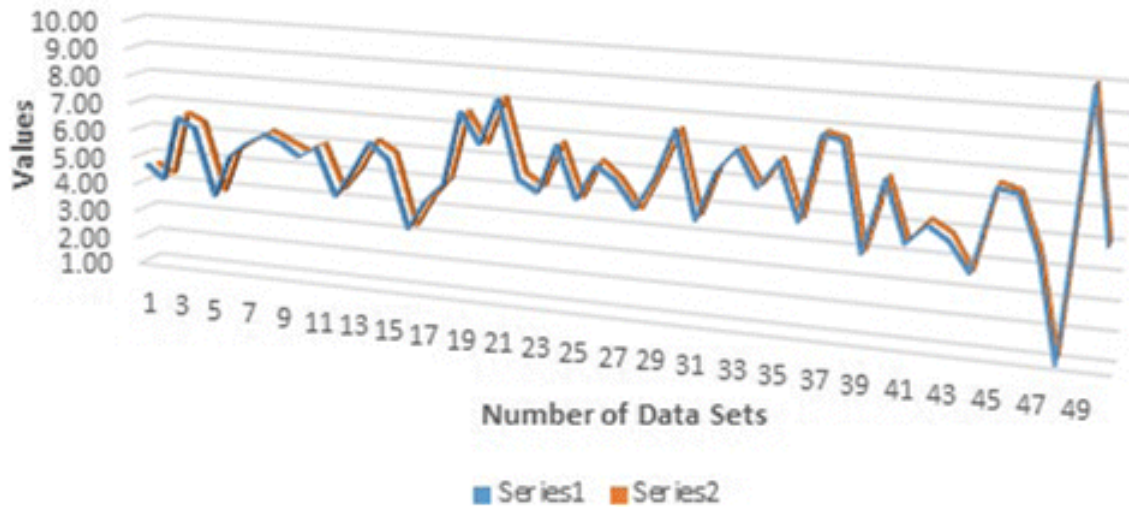


FIGURE 7
SKECM MODEL'S INTERNAL STRUCTURE

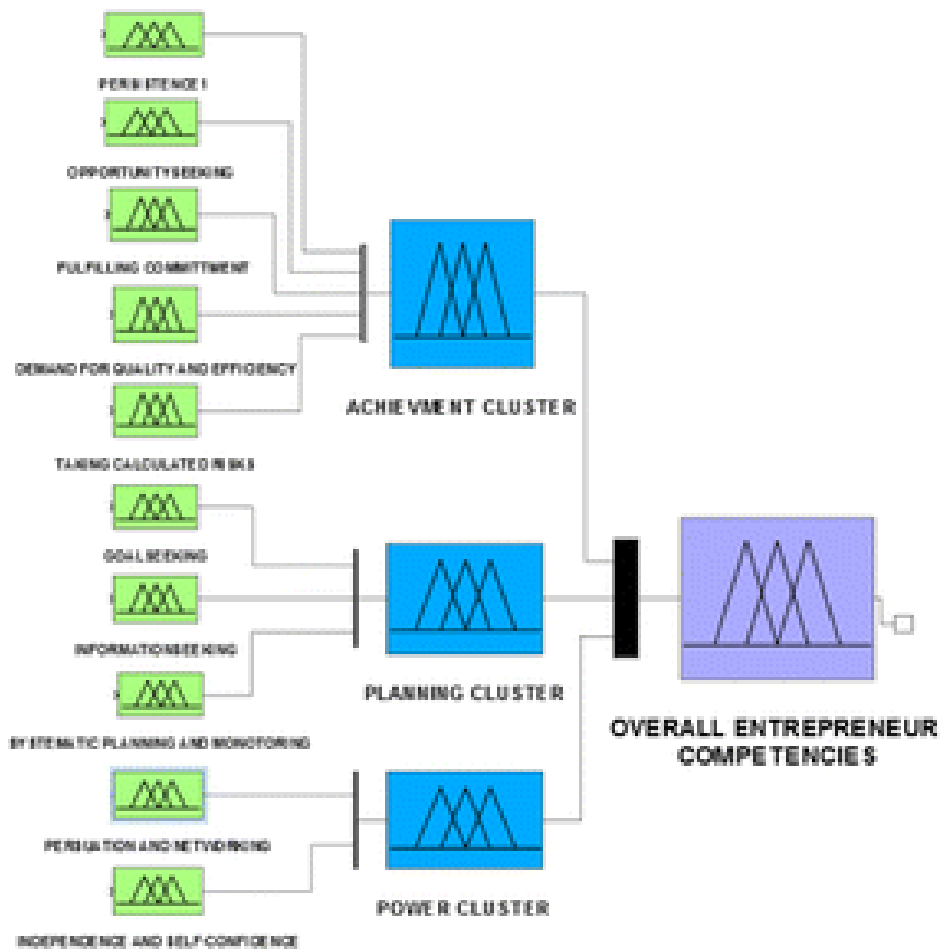


FIGURE 8
THE SKECM SIMULATED VERSION

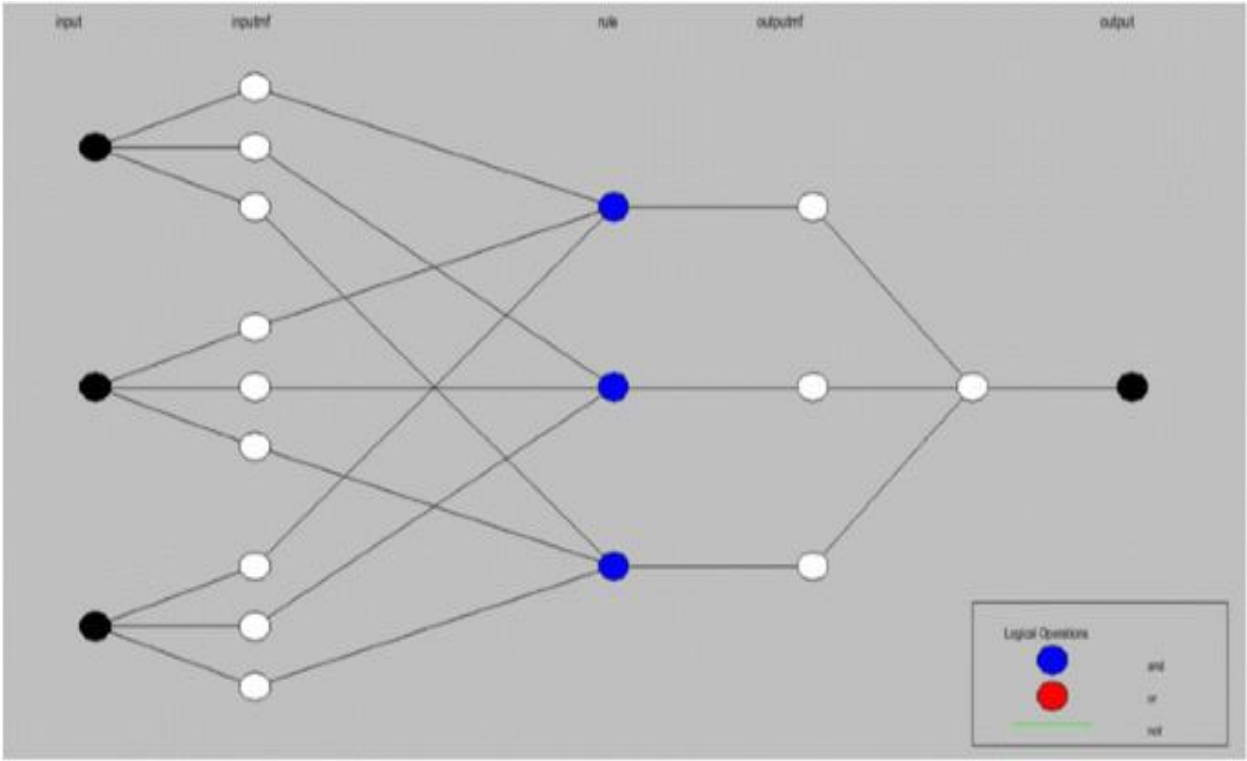
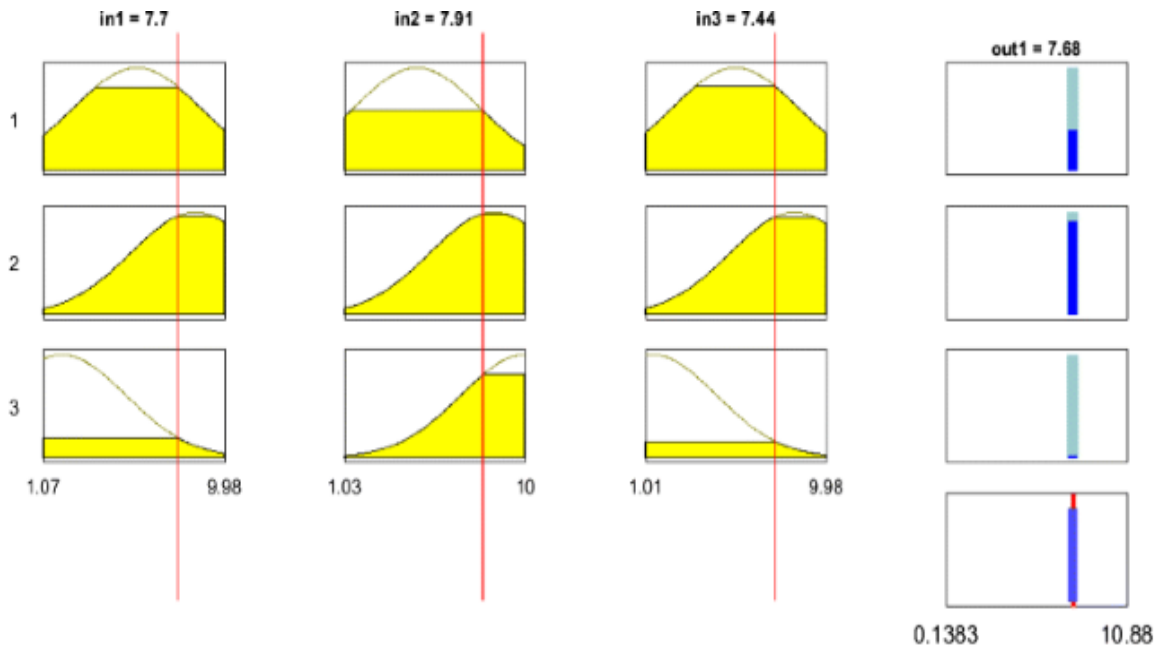


FIGURE 9

**SKECM INPUT - OUTPUT OVERALL ENTREPRENEUR COMPETENCIES – LAST STAGE
RULE VIEWER**



Input: [7.7;7.91;7.44]	Plot points: 101	Move: left right down up
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FIGURE 10

A SAMPLE OF THE INPUTS' VALUES AND ALL OBTAINED COMPETENCIES' VALUES FOR ALL 14 DEVELOPED MODELS, COVERING THE THREE STAGES

	Cluster	Competencies	Attributes	Input				Competency Output	Cluster Output	Overall Competencies Output
				Poor	Satisfied	Good	Excellent			
OVERALL ENTREPRENEUR COMPETENCIES	ACHIEVEMENT	Opportunity-Seeking and Initiatives	Initiative-taker	4.64				5.06 (Satisfied)	7.7.(GOOD)	7.68 (GOOD)
			Innovative		5.72					
			Opportunity-seeker	4.81						
		Persistence	Decision Maker			7.89		8.02 (Good) 8.03		
			Problem Solver			7.56				
			Leader				8.64			
		Fulfilling Commitments	Hard-Worker				8.76	8.31 (Good)		
			Proactive			7.33				
			Business Focus				8.85			
		Demand for Quality and Efficiency	Efficiency-Orientated			8.43		8.56 (Excellent)		
			Quality Consciousness			8.41				
			Determined				8.85			
		Taking Calculated Risks	Risk-Taking				8.62	8.54 (Excellent)		
			Risk-Managing			8.28				
	Desirable					8.74				
	PLANNING	Goal-Seeking	Goal-Oriented			8.32	8.53 (Excellent)			
			Effective Strategist			8.64				
			Proper Planner			8.63				
		Information-Seeking	Competitors' Aware			8.08		8.12 (Good)		
			Creative			7.66				
			Information Seeker				8.64			
Systematic Planning and Monitoring		Systematic Planner			8.41		7.08 (Good)			
	Performance-Oriented			7.00						
	Book-Keeper		5.83							
POWER	Persuasion and Networking	Persuasive			8.53	7.01 (Good)				
		Influence Strategy User	3.44							
		Networker			9.06					
	Independence and Self-Confidence	Independent			8.21		7.73 (Good)			
		Self-Esteem		5.93						
		Self-Confident				9.06				

FIGURE 11

MAPE VALUES VS. COMPETENCIES' PLOT

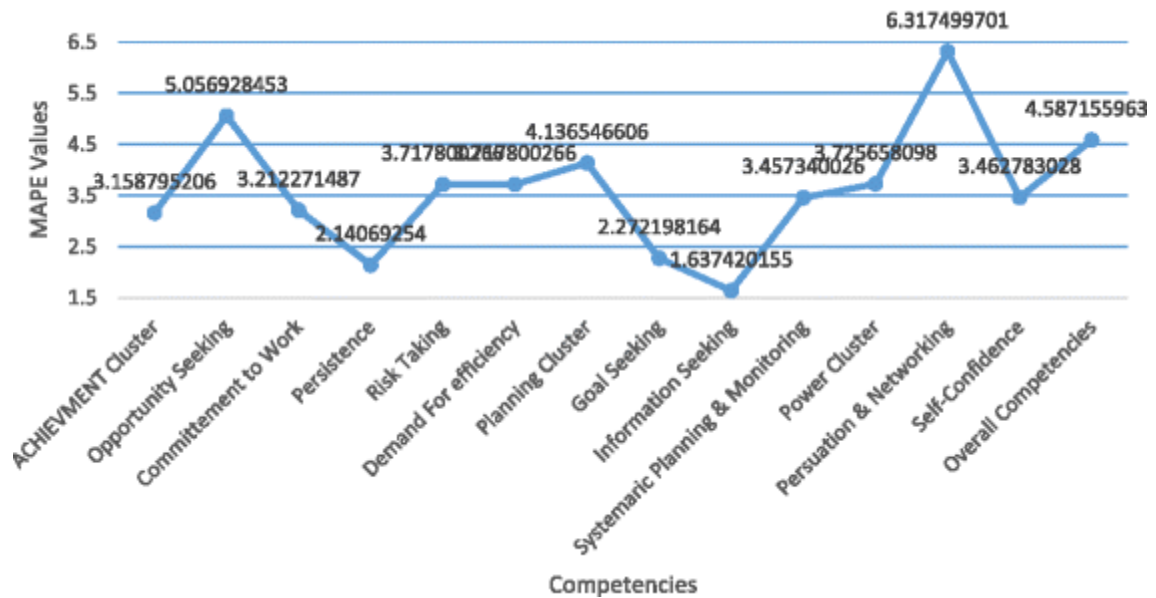


FIGURE 12
CORRELATION COEFFICIENT VALUES VS. COMPETENCIES' PLOT

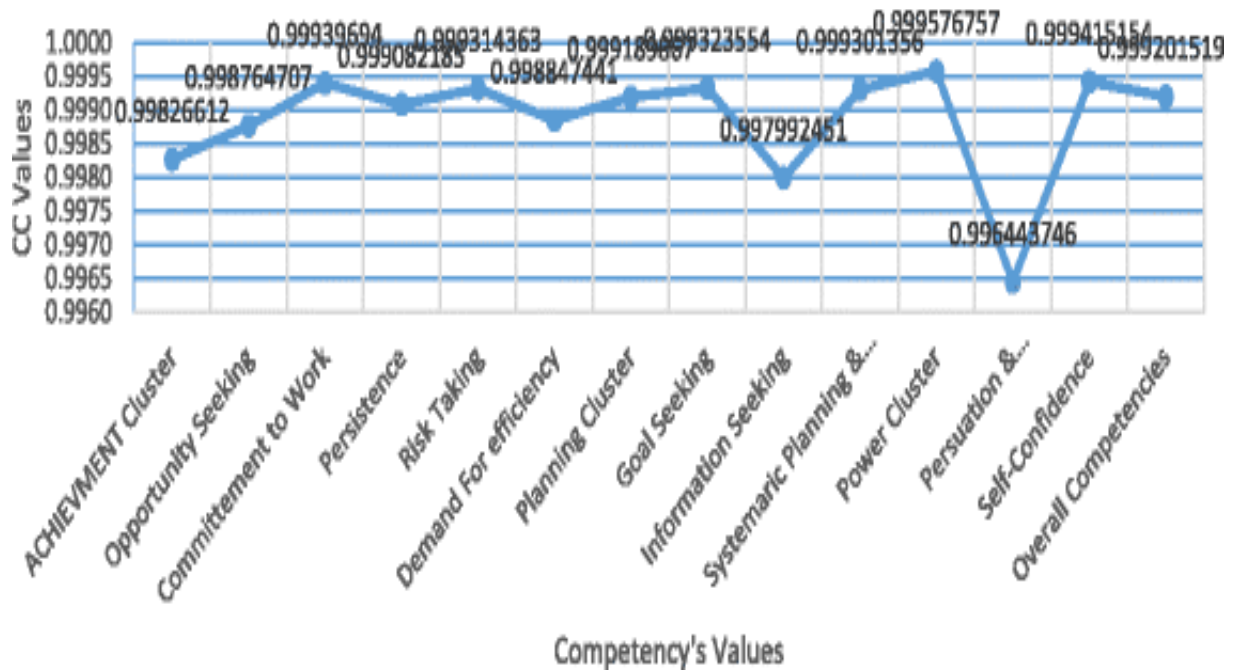


FIGURE 13

MAXIMUM PERCENTAGE ERROR VALUES VS. COMPETENCIES' PLOT

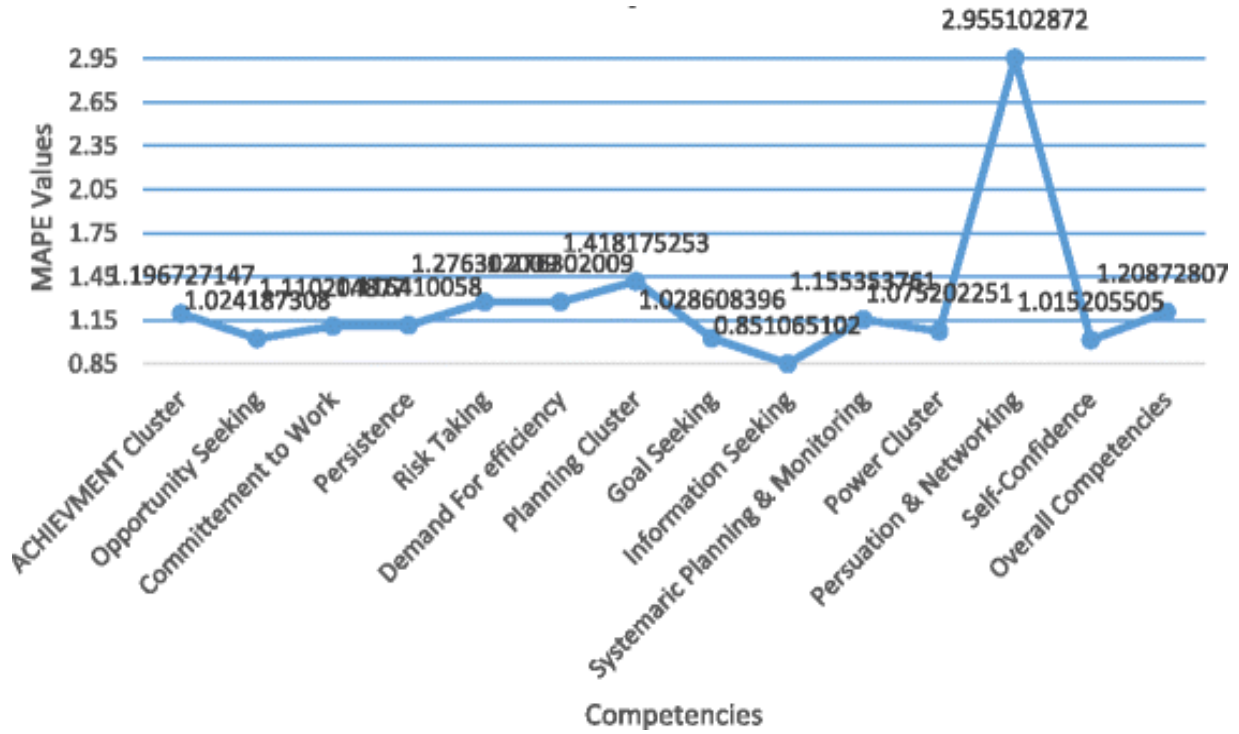
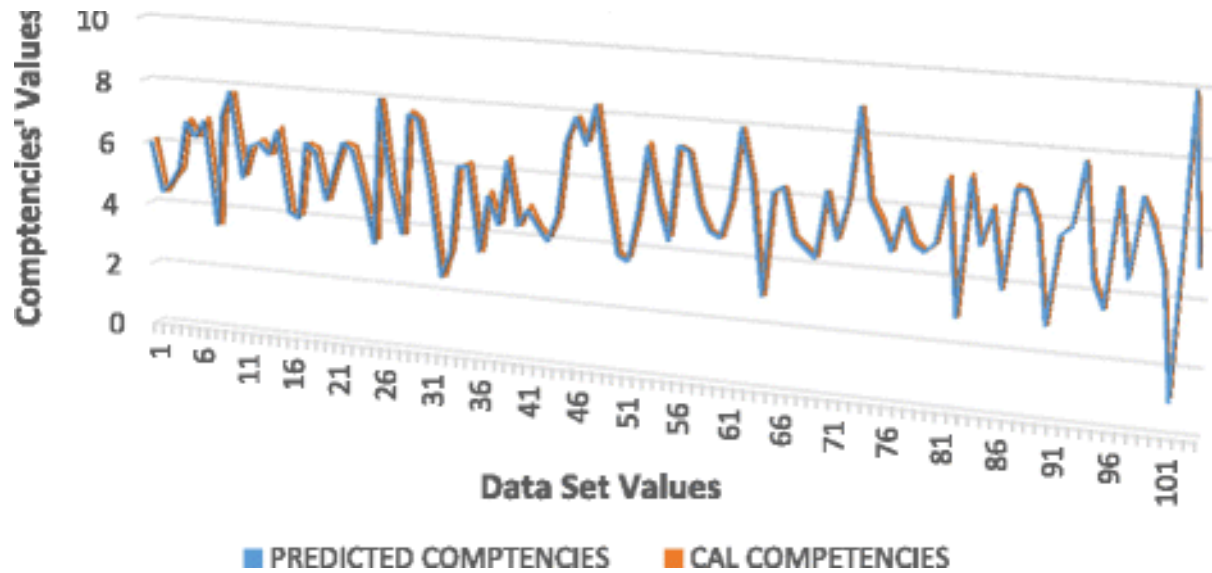


FIGURE 14
OVERALL CALCULATED VS. PREDICTED ENTREPRENEUR COMPETENCIES' PLOT



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TRANSLATED VERSION: SPANISH

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSION TRADUCIDA: ESPAÑOL

A continuación se muestra una traducción aproximada de las ideas presentadas anteriormente. Esto se hizo para dar una comprensión general de las ideas presentadas en el documento. Por favor, disculpe cualquier error gramatical y no responsabilite a los autores originales de estos errores.

INTRODUCCIÓN

Recientemente, el emprendimiento y la cultura emprendedora han recibido una mayor atención tanto en la investigación académica como en la práctica. Varias iniciativas en Palestina son la realización de talleres y sesiones de capacitación para promover la cultura de tendencias conexas como las empresas emergentes, la innovación, el emprendimiento y las propiedades intelectuales. Estos se logran a nivel de escuela secundaria como Al-Nayzak (<http://www.alnayzak.org/>), así como algunas instituciones de educación terciaria como la Compañía de Transferencia de Tecnología, IBDAÁ' (<http://www.ibdaa.ps>), como ejemplo. El estatuto de emprendimiento palestino se presenta brevemente en la sección "Estado de emprendimiento en Palestina".

El término emprendedor tiene varias definiciones. Estos incluyen una persona que organiza y administra cualquier empresa, principalmente un negocio, por lo general con considerable iniciativa y riesgo (<http://dictionary.reference.com/browse/entrepreneur>); alguien que ejerce la iniciativa organizando una empresa para beneficiarse de una oportunidad y, como responsable de la toma de decisiones, decide qué, cómo y cuánto de un producto o servicio se producirá (<http://www.businessdictionary.com/definition/entrepreneur.html>); una persona que desarrolla un plan de negocios, adquiere los recursos humanos, financieros y otros recursos requeridos, y es responsable de su éxito o fracaso (Hisrich 2011); y cualquier persona que organice y/o administre recursos en forma de una empresa no agrícola auto-contable, y asuma una cantidad significativa de riesgo asociado con la participación de capital en esa empresa (mcclelland 1990). Estas definiciones completas comparten atributos como negocios, iniciativa, gestión, toma de decisiones, riesgo y el emprendimiento, por otro lado, pueden definirse como la capacidad necesaria para identificar y generar ideas de negocio competitivas, utilizar recursos, organizar la producción, promover los productos o servicios, gestionar riesgos y trabajar continuamente por el crecimiento y la excelencia del negocio.

La palabra competencia también tiene varios significados como suficiencia para satisfacer los deseos de la vida (<http://dictionary.reference.com/browse/entrepreneur>); la calidad de estar adecuada o bien calificado física e intelectualmente (<http://www.thefreedictionary.com/competency>); la capacidad de aplicar un conjunto de conocimientos, habilidades y habilidades relacionados para realizar con éxito funciones o tareas en un entorno de trabajo definido (Modelo de Competencia de Emprendimiento 2010); la capacidad, que se produce en una persona que conduce a comportamientos que satisfacen las demandas de trabajo dentro de los límites del entorno organizacional, lo que a su vez produce resultados deseados (Boyatzis 1982); y la suma de experiencias, conocimientos, habilidades y actitud que adquirimos durante nuestro tiempo de vida para un desempeño efectivo en una tarea o trabajo (Kaur y Bains 2013). Todas estas definiciones se refieren a la competencia como una capacidad/capacidad que sirve como base para los estándares de conocimientos y habilidades. Vale la pena mencionar que las competencias se aplican a todos los aspectos de la vida, incluyendo, competencias de posgrado, competencias laborales, competencias gerenciales, etc. (Mitchelmore y Rowley 2010) y (Linton y Walsh 2013) pueden ser revisados para deliberar aún más el significado del emprendimiento y las competencias.

En cuanto a las competencias empresariales, el enfoque de este documento, la revisión de la literatura revela que los artículos de investigación y artículos han abordado aquellos que utilizan diferentes términos como características, competencias, rasgos y cualidades (Modelo de Competencia de Emprendimiento 2010; mccllelland 1987; David y Edward 2011; Abdullah et al. 2009; Badal 2014; 2011; 2013; Brinckmann 2008; Mitchelmore y Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell 2008; Hombre 2006; James 2011; Anne 2011; Shukla 2009; Wu 2009; Azúcares 2014; Prats et al. 2009; El Marco de Política de Emprendimiento de la UNCTAD 2012; El Programa Empretec: La Guía del Emprendedor 2015; El Consejo Nacional Canadiense de Investigación Empresarial). El número de competencias cuantificadas oscila entre 5 (mccllelland 1987; David y Edward 2011; Abdullah et al. 2009; Badal 2014; 2011) a 7 (Kaur et al. 2013), 10 (Brinckmann 2008; Mitchelmore y Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell 2008; Hombre 2006; James 2011), 12 (Anne 2011), 13 (mccllelland 1987), 15 (Entrepreneurship Competency Model 2010; Shukla 2009), 23 (Wu 2009) y hasta 25 (mccllelland 1987). La mayoría de ellos tienen competencias como apasionados, a tomar riesgos, confianza, determinación, disciplinados, visionarios, toma de decisiones y liderazgo. Además, otros investigadores clasificaron las competencias en competencias empresariales clave (o niveles/capas/clusters/niveles) en lugar de tratar con las individuales generales. Estas competencias clave propuestas van de 2 a 9 categorías (Boyatzis 1982) identificaron rasgos empresariales y motivos empresariales, mientras que (Azúcares 2014) se dieron cuenta de factores psicológicos, y de educación y experiencia. La categoría de tres tipos se identifica como competencias actitudinales, conductuales y gerenciales (Mitchelmore y Rowley 2010); logros/resultados: orientación, creación interpersonal y de equipo, y enfoque empresarial (Prats et al. 2009; El Marco de Política de Emprendimiento de la UNCTAD 2012); grupos de logros, planificación y poder (The Empretec Program: The Entrepreneur's Guide 2015); y competencias personales, interpersonales y empresariales (El Consejo Nacional canadiense de Investigación de Emprendimiento y http://www.nrc-cnrc.gc.ca/eng/careers/behavioural_competencies/entrepreneurship_competency.html). Los modelos de cuatro categorías incluyen: conocimientos, motivación, capacidades/calidades y características (Driessen 2005); y el logro, el poder personal, la planificación y la construcción de relaciones (Smith y Shankar 2015). La categoría de cinco niveles es propuesta por (Azúcares 2014) que comprende: mentalidad por cuenta propia, perspectiva gerencial, actitud de propietario/líder, inversor emprendedor y verdadero emprendedor. Además, (Modelo de Competencia de Emprendimiento 2010) propone una competencia de emprendimiento de seis capas que incluye eficacia personal, académica, trabajo, competencias técnicas y de gestión del sector industrial y competencias específicas de ocupación. Se propone el modelo de estructura de siete categorías de covarianza para poner a prueba la intención empresarial entre los estudiantes de ingeniería del MIT (I'tjel y Franke 2003). Dicho modelo incluye parámetros clave como el comportamiento empresarial, la intención empresarial, la propensión a la toma de riesgos, el lugar de control, las actitudes hacia el emprendimiento, la percepción del contexto y los antecedentes personales. Además, el modelo de nueve competencias propuesto por (The Competen Model Development and Use: A Technical Assistance Guide 2015) incluye la eficacia personal, académica, laboral, áreas de emprendimiento técnico, de enfoque

empresarial, y el resto de los niveles representan la especialización que ocurre dentro de ocupaciones específicas dentro de una industria. Todas estas categorías incluyen componentes como personal, logro, planificación, poder y académico explícita o implícitamente.

En este artículo, el autor tiene como objetivo revisar el estatus de emprendimiento palestino y diversas iniciativas. El segundo objetivo es proponer un software basado en la construcción suave que pueda predecir la calidad de las características y competencias empresariales clave de un emprendedor. Este software propuesto se basa en el modelo de tres clústeres que ha sido desarrollado e implementado con éxito principalmente por Empretec (Driessen 2005; Smith y Shankar 2015) en decenas de países de todo el mundo a lo largo de las tres décadas.

Tras esta breve introducción, el documento se organiza de la siguiente manera: la sección "Revisión de la literatura" examina los estudios pertinentes que han abordado el problema del modelado de las competencias empresariales. La sección "Métodos" presenta brevemente la metodología utilizada. Le sigue una breve presentación del estatuto de emprendimiento palestino. La sección "Modelo propuesto" presenta las diversas técnicas de modelado de softcomputing y presenta el modelo SKECM propuesto. Si bien los resultados y los debates se tratan en la sección "Resultados y debates", la conclusión y los trabajos adicionales se presentan en la sección "Conclusiones".

CONCLUSIÓN

Palestina ha sido testigo de iniciativas y programas activos relacionados con el emprendimiento. Las principales características de estas iniciativas son las basadas en donantes que plantean la cuestión de la sostenibilidad, las organizaciones no gubernamentales informales alojadas en lugar de la oferta formal de universidades. Nunca se ha evaluado la calidad de estos programas y la calidad de las competencias de emprendimiento obtenidas. Ha llegado el momento de que los institutos palestinos de educación superior sigan la tendencia emergente de ofrecer cursos y programas formales de emprendimiento. Es seguro, será un paso esencial para proporcionar a la comunidad empresarios y empleadores que crearán puestos de trabajo y así impulsar la situación económica.

Se ha desarrollado un modelo SKECM basado en la construcción suave para predecir cada KEC y las competencias agrupadas en función de sus comportamientos asociados individuales que se tratan como cajas negras. En la tercera etapa del modelo SKECM también se ha logrado una evaluación general de las competencias empresariales. Los diferentes comportamientos adoptados, diez CIC y tres clústeres son proporcionados por Empretec. La validación de estos modelos se ha logrado mediante la generación aleatoria de 250 conjuntos de datos. Mediante el algoritmo de validación cruzada, los conjuntos de datos generados se han dividido en conjuntos de datos de entrenamiento y comprobación. Se han utilizado tres medidas para validar la adecuación y precisión de dichos modelos: MAPE, CC y MPE. Los valores principales obtenidos mape, CC y MPE son 0.8511, 0.9996 y 6.3175, respectivamente. Estos valores consistentes sugieren el potencial, la adecuación y la idoneidad del enfoque de softcomputing para evaluar y predecir las competencias clave empresariales y las competencias empresariales generales en el campo del emprendimiento.

El modelo SKECM desarrollado se propondrá para juzgar o evaluar la calidad de las competencias empresariales obtenidas a partir de los diversos programas de formación empresarial.

Por lo tanto, el futuro estudio de investigación se centrará en validar estos modelos con datos realistas comparados. Este paso es esencial para afinar los modelos antes de indicar la adecuación de la aplicación del enfoque de softcomputing al campo del emprendimiento. Además, para tener éxito en el negocio, es esencial integrar los modelos de KEC en todo el proceso de planificación empresarial que incluye varias tareas de planificación como introducción, descripción del negocio, descripción de productos y servicios, clientes, competencia, ubicación, precios, marketing, personal clave, material y fuentes de suministro, fabricación y producción, previsión de ventas predecir ganancias y pérdidas, flujo de caja de previsión y presentación. Además, vale la pena integrar los modelos de KEC con la innovación y las start-ups empresariales.

TRANSLATED VERSION: FRENCH

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSION TRADUITE: FRANÇAIS

Voici une traduction approximative des idées présentées ci-dessus. Cela a été fait pour donner une compréhension générale des idées présentées dans le document. Veuillez excuser toutes les erreurs grammaticales et ne pas tenir les auteurs originaux responsables de ces erreurs.

INTRODUCTION

Récemment, l'esprit d'entreprise et la culture entrepreneuriale ont reçu une plus grande attention tant dans la recherche universitaire que dans la pratique. Plusieurs initiatives en Palestine sont des ateliers et des sessions de formation pour promouvoir la culture des tendances connexes telles que les start-ups, l'innovation, l'entrepreneuriat et la propriété intellectuelle. Ceux-ci sont réalisés au niveau secondaire comme Al-Nayzak (<http://www.alnayzak.org/>), ainsi que dans certains établissements d'enseignement supérieur tels que la Technology Transfer Company, IBDA'A' (<http://www.ibdaa.ps>), par exemple. Le statut de l'entrepreneuriat palestinien est brièvement présenté dans la section « État de l'entrepreneuriat en Palestine ».

Le terme entrepreneur a plusieurs définitions. Il s'agit notamment d'une personne qui organise et gère toute entreprise, principalement une entreprise, généralement avec une initiative considérable et des risques (<http://dictionary.reference.com/browse/entrepreneur>); quelqu'un qui exerce l'initiative en organisant une entreprise pour bénéficier d'une occasion et, en tant que décideur, décide quoi, comment et quelle quantité d'un produit ou d'un service sera produit (<http://www.businessdictionary.com/definition/entrepreneur.html>); une personne qui élabore un plan d'affaires, acquiert les ressources humaines, financières et autres nécessaires, et est responsable de son succès ou de son échec (Hisrich 2011); et toute personne qui organise et/ou gère des ressources sous la forme d'une société non agricole auto-comptable et assume un risque important associé à la participation dans cette société (McClelland, 1990). Ces définitions complètes partagent des attributs tels que les affaires, l'initiative, la gestion, la prise de décision, le risque et l'esprit d'entreprise, d'autre part, peuvent être définies comme la capacité d'identifier et de générer des idées commerciales concurrentielles, d'utiliser les ressources, d'organiser la production, de promouvoir des produits ou des services, de gérer les risques et de travailler continuellement à la croissance et à l'excellence de l'entreprise.

Le mot concours a également plusieurs significations comme suffisance pour satisfaire les désirs de la vie (<http://dictionary.reference.com/browse/entrepreneur>); la qualité d'être adéquat ou physiquement et intellectuellement qualifié (<http://www.thefreedictionary.com/competency>); la capacité d'appliquer un ensemble de connaissances, de compétences et de compétences connexes pour exécuter avec succès des fonctions ou des tâches dans un environnement de travail défini (Modèle de compétence en entrepreneuriat 2010); capacité, qui se produit chez une personne qui conduit à des comportements qui répondent aux exigences du travail dans les limites de l'environnement organisationnel, ce qui produit à son tour les résultats souhaités (Boyatzis, 1982); et la somme des expériences, des connaissances, des compétences et de l'attitude que nous acquérons au cours de notre vie pour une performance efficace dans une tâche ou un travail (Kaur et Bains 2013). Toutes ces définitions désignent la compétence comme une capacité ou une capacité qui sert de base aux normes de connaissances et de compétences. Il convient de mentionner que les compétences s'appliquent à tous les aspects de la vie, y compris les compétences supérieures, les compétences professionnelles, les compétences en gestion, etc. (Mitchelmore et Rowley, 2010) et (Linton et Walsh, 2013) peuvent être examinées pour discuter davantage du sens de l'entrepreneuriat et des compétences.

En ce qui concerne les compétences en affaires, l'examen de la littérature révèle que les articles et articles de recherche ont abordé ceux qui utilisent des termes différents tels que caractéristiques, compétences, traits et qualités (Modèle de compétence en entrepreneuriat 2010; mcclelland, 1987; David et Edward, 2011; Abdullah et coll. 2009; Badal 2014; 2011; 2013; Brinckmann 2008; Mitchelmore et Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell, 2008; Homme 2006; James 2011; Anne 2011; Shukla, 2009; Wu, 2009; Sucres 2014; Prats et coll. 2009; Cadre stratégique de l'entrepreneuriat 2012 de la CNUCED; Le programme Empretec : Guide de l'entrepreneur 2015; Le Conseil national canadien pour la recherche en affaires). Le nombre de compétences quantifiées varie de 5 (mcclelland, 1987; David et Edward, 2011; Abdullah et coll. 2009; Badal 2014; 2011) à 7 (Kaur et coll. 2013), 10 (Brinckmann 2008; Mitchelmore et Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell, 2008; Homme 2006; James 2011), 12 (Anne 2011), 13 (mcclelland 1987), 15 (Modèle de compétence entrepreneuriale 2010; Shukla 2009), 23 (Wu 2009) et jusqu'à 25 (mcclelland 1987). La plupart d'entre eux ont des compétences aussi passionnées, prenant des risques, la confiance, la détermination, disciplinés, visionnaires, la prise de décision et le leadership. De plus, d'autres chercheurs ont classé les compétences en compétences clés en affaires (ou niveaux/couches/grappes/niveaux) plutôt que de s'occuper de compétences individuelles. Ces compétences clés proposées vont de 2 à 9 catégories (Boyatzis, 1982) ont identifié les caractéristiques commerciales et les motifs commerciaux, tandis que (Sugars 2014) elles ont pris conscience de facteurs psychologiques, ainsi que de l'éducation et de l'expérience. La catégorie des trois types est identifiée comme étant des compétences atyrual, comportementales et managériales (Mitchelmore et Rowley, 2010); réalisations/résultats : orientation, création interpersonnelle et d'équipe et approche commerciale (Prats et coll. 2009; Cadre de politique entrepreneuriale 2012 de la CNUCED); Le programme Empretec : Guide de l'entrepreneur 2015; compétences personnelles, interpersonnelles et commerciales (Le Conseil national canadien de l'entrepreneuriat et de la recherche http://www.nrc-cnrc.gc.ca/eng/careers/behavioural_competencies/entrepreneurship_competency.html). Les modèles dans quatre catégories incluent : connaissance, motivation, qualifications/qualités et dispositifs (Driessen 2005); réalisation, pouvoir personnel, planification et établissement de relations (Smith et Shankar 2015). La catégorie à cinq niveaux est proposée par (Sugars 2014) comprenant : l'auto-esprit, la perspective managériale, l'attitude propriétaire/leader, l'investisseur entrepreneurial et le véritable entrepreneur. En outre, (Modèle de compétence entrepreneuriale 2010) propose une compétence entrepreneuriale à six niveaux qui comprend des compétences personnelles, académiques, professionnelles, techniques et de gestion du secteur industriel et des compétences professionnelles spécifiques. Le modèle de structure de sept catégories de covariance est proposé pour tester l'intention commerciale des étudiants en génie du MIT (l'tjel et Franke, 2003). Ce modèle comprend des paramètres clés tels que le comportement des entreprises, l'intention de l'entreprise, la propension à prendre des risques, le lieu de contrôle, les attitudes à l'égard de l'esprit d'entreprise, la perception du contexte et les antécédents personnels. De plus, le modèle de neuf compétitions proposé par (The Competen Model Development and Use: A Technical Assistance Guide 2015) comprend l'efficacité personnelle, académique, professionnelle, les domaines de l'entrepreneuriat technique, l'orientation commerciale et le reste des niveaux représentent la spécialisation qui se produit dans des professions spécifiques au sein d'une industrie. Toutes ces catégories comprennent des éléments tels que le personnel, le rendement, la planification, le pouvoir et les universitaires explicitement ou implicitement.

Dans cet article, l'auteur vise à revoir le statut de l'entrepreneuriat palestinien et diverses initiatives. Le deuxième objectif est de proposer un logiciel basé sur une construction en douceur qui peut prédire la qualité des principales caractéristiques et compétences commerciales d'un entrepreneur. Ce logiciel proposé est basé sur le modèle à trois grappes qui a été développé et mis en œuvre avec succès principalement par Empretec (Driessen, 2005; Smith et Shankar 2015) dans des dizaines de pays à travers le monde au cours des trois décennies.

À la suite de cette brève introduction, le document est organisé comme suit : la section « Revue de littérature » examine les études pertinentes qui ont abordé le problème de la modélisation des compétences en affaires. La section « Méthodes » présente brièvement la méthodologie utilisée. Elle est suivie d'une brève présentation du statut d'entrepreneuriat palestinien. La section « Modèle proposé » présente les

diverses techniques de modélisation à faible ordinateur et introduit le modèle SKECM proposé. Bien que les résultats et les discussions soient discutés dans la section « Résultats et discussions », la conclusion et les travaux additionnels sont présentés dans la section « Conclusions ».

CONCLUSION

La Palestine a été témoin d'initiatives et de programmes actifs liés à l'entrepreneuriat. Les principales caractéristiques de ces initiatives sont celles fondées sur les donateurs qui soulèvent la question de la durabilité, des organisations non gouvernementales informelles hébergées plutôt que l'offre formelle des universités. La qualité de ces programmes et la qualité des compétences entrepreneuriales acquises n'ont jamais été évaluées. Le moment est venu pour les instituts palestiniens d'enseignement supérieur de suivre la tendance émergente de fournir des cours et des programmes formels d'entrepreneuriat. C'est sûr, ce sera une étape essentielle pour fournir à la communauté des entrepreneurs et des employeurs qui créeront des emplois et stimuleront ainsi la situation économique.

Un modèle SKECM basé sur une construction en douceur a été développé pour prédire chaque KEC et les compétences regroupées en fonction de leurs comportements individuels associés qui sont traités comme des boîtes noires. Une évaluation globale des compétences commerciales a également été réalisée au cours de la troisième étape du modèle SKECM. Les différents comportements adoptés, dix CIC et trois clusters sont fournis par Empretec. La validation de ces modèles a été réalisée en générant au hasard 250 ensembles de données. À l'aide de l'algorithme de validation croisée, les ensembles de données générés ont été divisés en ensembles de données de formation et de vérification. Trois mesures ont été utilisées pour valider l'adéquation et l'exactitude de ces modèles : MAPE, CC et MPE. Les principales valeurs obtenues mape, CC et MPE sont 0,8511, 0,9996 et 6,3175, respectivement. Ces valeurs constantes suggèrent le potentiel, l'adéquation et l'adéquation de l'approche de softcomputing pour évaluer et prédire les compétences commerciales clés et les compétences commerciales globales dans le domaine de l'entrepreneuriat.

Le modèle SKECM développé sera proposé pour juger ou évaluer la qualité des compétences commerciales acquises grâce aux différents programmes de formation en affaires.

Par conséquent, la future étude se concentrera sur la validation de ces modèles avec des données réalistes comparées. Cette étape est essentielle pour affiner les modèles avant d'indiquer l'adéquation de l'application de l'approche softcomputing dans le domaine de l'entrepreneuriat. En outre, pour réussir dans l'entreprise, il est essentiel d'intégrer les modèles KEC tout au long du processus de planification d'entreprise qui comprend diverses tâches de planification telles que l'introduction, la description de l'entreprise, la description des produits et des services, les clients, la concurrence, l'emplacement, les prix, le marketing, le personnel clé, le matériel et les sources d'approvisionnement, la fabrication et la production, les prévisions de ventes prévoient le bénéfice et la perte, les prévisions et les flux de trésorerie de présentation. En outre, les modèles KEC méritent d'être intégrés à l'innovation et au démarrage d'entreprises.

TRANSLATED VERSION: GERMAN

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

ÜBERSETZTE VERSION: DEUTSCH

Hier ist eine ungefähre Übersetzung der oben vorgestellten Ideen. Dies wurde getan, um ein allgemeines Verständnis der in dem Dokument vorgestellten Ideen zu vermitteln. Bitte entschuldigen Sie alle grammatikalischen Fehler und machen Sie die ursprünglichen Autoren nicht für diese Fehler verantwortlich.

EINLEITUNG

In jüngster Zeit haben Unternehmertum und Unternehmenskultur sowohl in der akademischen Forschung als auch in der Praxis größere Aufmerksamkeit erhalten. Mehrere Initiativen in Palästina sind Workshops und Schulungen zur Förderung der Kultur verwandter Trends wie Start-ups, Innovation, Unternehmertum und geistiges Eigentum. Diese werden auf der Sekundarstufe Al-Nayzak (<http://www.alnayzak.org/>) sowie auf einigen tertiären Bildungseinrichtungen wie der Technologietransfergesellschaft IBDA' (<http://www.ibdaa.ps>) als Beispiel erreicht. Der Status des palästinensischen Unternehmertums wird kurz im Abschnitt "Staat des Unternehmertums in Palästina" vorgestellt.

Der Begriff Unternehmer hat mehrere Definitionen. Dazu gehört eine Person, die ein Unternehmen, hauptsächlich ein Unternehmen, organisiert und leitet, in der Regel mit beträchtlicher Initiative und Risiko (<http://dictionary.reference.com/browse/entrepreneur>); jemand, der die Initiative ausübt, indem er ein Unternehmen organisiert, um von einer Gelegenheit zu profitieren und als Entscheidungsträger entscheidet, was, wie und wie viel von einem Produkt oder einer Dienstleistung produziert wird (<http://www.businessdictionary.com/definition/entrepreneur.html>); eine Person, die einen Geschäftsplan entwickelt, die erforderlichen personellen, finanziellen und sonstigen Ressourcen erwirbt und für ihren Erfolg oder Misserfolg verantwortlich ist (Hisrich 2011); und jeden, der Ressourcen in Form eines selbstbuchenden nichtlandwirtschaftlichen Unternehmens organisiert und/oder verwaltet und ein erhebliches Risiko im Zusammenhang mit der Beteiligung an dieser Gesellschaft übernimmt (McClelland 1990). Diese vollständigen Definitionen teilen Attribute wie Unternehmen, Initiative, Management, Entscheidungsfindung, Risiko und Unternehmertum, andererseits können definiert werden als die Fähigkeit, wettbewerbsfähige Geschäftsideen zu identifizieren und zu generieren, Ressourcen zu nutzen, Produktion zu organisieren, Produkte oder Dienstleistungen zu fördern, Risiken zu managen und kontinuierlich für Unternehmenswachstum und Exzellenz zu arbeiten.

Das Wort Wettbewerb hat auch mehrere Bedeutungen als ausreichend, um die Wünsche des Lebens zu befriedigen (<http://dictionary.reference.com/browse/entrepreneur>); die Qualität der angemessenen oder körperlich und intellektuell qualifizierten (<http://www.thefreedictionary.com/competency>); die Fähigkeit, eine Reihe verwandter Kenntnisse, Fähigkeiten und Fähigkeiten anzuwenden, um Aufgaben oder Aufgaben in einem definierten Arbeitsumfeld erfolgreich auszuführen (Entrepreneurship Competence Model 2010); Kapazität, die in einer Person auftritt, die zu Verhaltensweisen führt, die den Anforderungen der Arbeit innerhalb der Grenzen des organisatorischen Umfelds entsprechen, was wiederum zu gewünschten Ergebnissen führt (Boyatzis 1982); und die Summe der Erfahrungen, Kenntnisse, Fähigkeiten und Einstellungen, die wir zu Lebzeiten für eine effektive Leistung in einer Aufgabe oder Arbeit erwerben (Kaur und Bains 2013). Alle diese Definitionen beziehen sich auf Kompetenz als Kapazität/Kapazität, die als Grundlage für Wissens- und Qualifikationsstandards dient. Es ist erwähnenswert, dass Kompetenzen für alle Aspekte des Lebens gelten, einschließlich Graduiertenkompetenzen, Berufskompetenzen, Management-Kompetenzen, etc. (Mitchelmore und Rowley 2010) und (Linton und Walsh 2013) können überprüft werden, um die Bedeutung von Unternehmertum und Kompetenzen weiter zu diskutieren.

In Bezug auf die unternehmerischen Kompetenzen, den Schwerpunkt dieses Dokuments, zeigt die Literaturrezension, dass Forschungsartikel und Artikel diejenigen adressiert haben, die unterschiedliche Begriffe wie Merkmale, Kompetenzen, Eigenschaften und Qualitäten verwenden (Entrepreneurship Competence Model 2010; McClelland 1987; David und Edward 2011; Abdullah et al. 2009; Badal 2014; 2011; 2013; Brinckmann 2008; Mitchelmore und Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell 2008; Mann 2006; James 2011; Anne 2011; Shukla 2009; Wu 2009; Zucker 2014; Prats et al. 2009; Rahmen für die unternehmerischenpolitik 2012 der UNCTAD; Das Empretec-Programm: Der Unternehmerführer 2015; The Canadian National Council for Business Research). Die Zahl der quantifizierten Kompetenzen reicht von 5 (McClelland 1987; David und Edward 2011; Abdullah et al. 2009; Badal 2014; 2011) bis 7 (Kaur et al. 2013), 10 (Brinckmann 2008; Mitchelmore und Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell 2008; Mann 2006; James 2011), 12 (Anne 2011), 13 (McClelland 1987), 15 (Entrepreneurship Competency Model 2010; Shukla 2009), 23 (Wu 2009) und bis zu 25 (McClelland 1987). Die meisten von

ihnen haben Fähigkeiten wie leidenschaftlich, Risiken eingehend, Vertrauen, Entschlossenheit, diszipliniert, visionär, Entscheidungsfindung und Führung. Darüber hinaus klassifizierten andere Forscher Kompetenzen in zentrale Geschäftskompetenzen (oder Ebenen/Schichten/Cluster/Ebenen), anstatt sich mit individuellen Kompetenzen zu beschäftigen. Diese vorgeschlagenen Schlüsselkompetenzen reichen von 2 bis 9 Kategorien (Boyatzis 1982) identifizierte Geschäftsmerkmale und geschäftliche Motive, während (Sugars 2014) sie psychologische Faktoren sowie Bildung und Erfahrung realisierten. Die Kategorie der drei Typen wird als atyrische, verhaltensbezogene und managementbezogene Kompetenzen identifiziert (Mitchelmore und Rowley 2010); Erfolge/Ergebnisse: Orientierung, zwischenmenschliche und Teamerstellung sowie Geschäftsansatz (Prats et al. 2009; Rahmen für die Unternehmerischen Initiative der UNCTAD 2012); Das Empretec-Programm: Der Unternehmerführer 2015; persönliche, zwischenmenschliche und geschäftliche Kompetenzen (Der Canadian National Entrepreneurship and Research Council http://www.nrc-cnrc.gc.ca/eng/careers/behavioural_competencies/entrepreneurship_competency.html). Zu den Modellen in vier Kategorien gehören: Wissen, Motivation, Fähigkeiten/Qualitäten und Merkmale (Driessen 2005); Leistung, persönliche Macht, Planung und Beziehungsaufbau (Smith und Shankar 2015). Die fünfstufige Kategorie wird von (Sugars 2014) vorgeschlagen, bestehend aus: Selbstgesinnung, Managementperspektive, Eigentümer-/Führer-Haltung, unternehmerischer Investor und echter Unternehmer. Darüber hinaus schlägt das Entrepreneurship Competence Model 2010 eine sechsstufige unternehmerischekompetenz vor, die persönliche, akademische, Arbeits-, technische und Managementkompetenzen des Industriesektors und spezifische Berufskompetenzen umfasst. Das Strukturmodell von sieben Kovarianzkategorien wird vorgeschlagen, um die Geschäftsabsicht unter MIT-Ingenieurstudenten zu testen (I'tjel und Franke 2003). Dieses Modell umfasst wichtige Parameter wie Geschäftsverhalten, Geschäftsabsicht, Risikobereitschaft, Kontrollplatz, Einstellung zum Unternehmertum, Wahrnehmung von Kontext und persönlichen Hintergrund. Darüber hinaus umfasst das von (The Competen Model Development and Use: A Technical Assistance Guide 2015) vorgeschlagene Neun-Wettbewerb-Modell persönliche, akademische, Arbeitseffizienz, Bereiche des technischen Unternehmertums, Geschäftsorientierung und die übrigen Ebenen stellen die Spezialisierung dar, die in bestimmten Berufen innerhalb einer Branche stattfindet. Alle diese Kategorien umfassen Komponenten wie Personal, Leistung, Planung, Macht und Akademiker explizit oder implizit.

In diesem Artikel möchte der Autor den Status des palästinensischen Unternehmertums und verschiedene Initiativen überprüfen. Das zweite Ziel ist es, Software auf der Grundlage einer reibungslosen Konstruktion vorzuschlagen, die die Qualität der wichtigsten Geschäftsmerkmale und Kompetenzen eines Unternehmers vorhersagen kann. Diese vorgeschlagene Software basiert auf dem Drei-Cluster-Modell, das erfolgreich von Empretec entwickelt und implementiert wurde (Driessen 2005; Smith und Shankar 2015) in Dutzenden von Ländern auf der ganzen Welt in den drei Jahrzehnten.

Im Anschluss an diese kurze Einführung ist das Dokument wie folgt organisiert: Der Abschnitt "Literaturüberprüfung" untersucht die relevanten Studien, die sich mit dem Problem der Unternehmenskompetenzmodellierung befassen haben. Im Abschnitt "Methoden" wird kurz die verwendete Methodik dargestellt. Im Anschluss daran wird kurz über den Status des palästinensischen Unternehmertums vorgestellt. Im Abschnitt "Vorgeschlagenes Modell" werden die verschiedenen Softcomputing-Modellierungstechniken vorgestellt und das vorgeschlagene SKECM-Modell vorgestellt. Während die Ergebnisse und Diskussionen im Abschnitt "Ergebnisse und Diskussionen" diskutiert werden, werden die Schlussfolgerungen und die zusätzlichen Arbeiten im Abschnitt "Schlussfolgerungen" vorgestellt.

SCHLUSSFOLGERUNG

Palästina hat aktive Initiativen und Programme im Zusammenhang mit Unternehmertum erlebt. Die Hauptmerkmale dieser Initiativen sind auf Geben basierende Initiativen, die das Thema Nachhaltigkeit aufwerfen, informelle Nichtregierungsorganisationen, die statt des formellen Angebots von Universitäten gehostet werden. Die Qualität dieser Programme und die Qualität der erworbenen unternehmerischen

Fähigkeiten wurden nie bewertet. Es ist an der Zeit, dass die palästinensischen Hochschulen dem sich abzeichnenden Trend folgen, formale Kurse und Programme für Unternehmertum anbieten zu können. Es ist sicher, es wird ein wesentlicher Schritt sein, um die Gemeinschaft mit Unternehmern und Arbeitgebern zu versorgen, die Arbeitsplätze schaffen und damit die wirtschaftliche Situation ankurbeln werden.

Ein SKECM-Modell, das auf glatter Konstruktion basiert, wurde entwickelt, um jeden KEC und die Kompetenzen vorherzusagen, die nach ihren individuellen Verhaltensmustern gruppiert sind, die als Blackboxes behandelt werden. Auch in der dritten Stufe des SKECM-Modells wurde eine Gesamtbewertung der Geschäftskompetenzen vorgenommen. Die verschiedenen Verhaltensweisen, zehn CIC und drei Cluster werden von Empretec zur Verfügung gestellt. Die Validierung dieser Modelle wurde durch die zufällige Generierung von 250 Datensätzen erreicht. Mithilfe des Kreuzvalidierungsalgorithmus wurden die generierten Datensätze in Trainings- und Verifizierungsdatensätze unterteilt. Drei Maßnahmen wurden verwendet, um die Angemessenheit und Genauigkeit dieser Modelle zu validieren: MAPE, CC und MPE. Die wichtigsten erhaltenen Mape, CC und MPE sind 0.8511, 0.9996 und 6.3175. Diese konsistenten Werte deuten auf das Potenzial, die Angemessenheit und die Eignung des Softcomputing-Ansatzes hin, um wichtige Geschäftskompetenzen und allgemeine Geschäftskompetenzen im Bereich Unternehmertum zu bewerten und vorherzusagen.

Das entwickelte SKECM-Modell wird vorgeschlagen, um die Qualität der unternehmerischen Fähigkeiten, die aus den verschiedenen betrieblichen Ausbildungsprogrammen gewonnen werden, zu beurteilen oder zu bewerten.

Daher wird sich die zukünftige Forschungsstudie darauf konzentrieren, diese Modelle mit realistischen Daten im Vergleich zu validieren. Dieser Schritt ist für die Feinabstimmung der Modelle von wesentlicher Bedeutung, bevor die Angemessenheit der Anwendung des Softcomputing-Ansatzes auf den Bereich des Unternehmertums angegeben wird. Um im Geschäft erfolgreich zu sein, ist es außerdem wichtig, KEC-Modelle in den gesamten Geschäftsplanungsprozess zu integrieren, die verschiedene Planungsaufgaben wie Einführung, Geschäftsbeschreibung, Produkt- und Servicebeschreibung, Kunden, Wettbewerb, Standort, Preisgestaltung, Marketing, Schlüsselpersonal, Material und Bezugsquellen, Fertigung und Produktion, Umsatzprognose vorhersage von Gewinn und Verlust, Prognose und Präsentation Cashflow umfassen. Darüber hinaus sind KEC-Modelle die Integration in Innovation und Unternehmensgründungen wert.

TRANSLATED VERSION: PORTUGUESE

Below is a rough translation of the insights presented above. This was done to give a general understanding of the ideas presented in the paper. Please excuse any grammatical mistakes and do not hold the original authors responsible for these mistakes.

VERSÃO TRADUZIDA: PORTUGUÊS

Aqui está uma tradução aproximada das ideias acima apresentadas. Isto foi feito para dar uma compreensão geral das ideias apresentadas no documento. Por favor, desculpe todos os erros gramaticais e não responsabilize os autores originais responsáveis por estes erros.

INTRODUÇÃO

Recentemente, o empreendedorismo e a cultura empresarial têm recebido uma maior atenção tanto na investigação académica como na prática. Várias iniciativas na Palestina são workshops e sessões de formação para promover a cultura de tendências relacionadas como start-ups, inovação, empreendedorismo e propriedade intelectual. Estes são alcançados ao nível do ensino secundário, como Al-Nayzak (<http://www.alnayzak.org/>), bem como algumas instituições de ensino superior, como a Empresa de Transferência de Tecnologia, IBDA' (<http://www.ibdaa.ps>), como exemplo. O Estatuto do Empreendedorismo Palestino é brevemente apresentado na secção "Estado de Empreendedorismo na Palestina".

O termo empreendedor tem várias definições. Estes incluem uma pessoa que organiza e gere qualquer empresa, principalmente um negócio, geralmente com considerável iniciativa e risco (<http://dictionary.reference.com/browse/entrepreneur>); alguém que exerce a iniciativa organizando uma empresa para beneficiar de uma oportunidade e, como decisor, decide o quê, como e quanto de um produto ou serviço será produzido (<http://www.businessdictionary.com/definition/entrepreneur.html>); uma pessoa que desenvolva um plano de negócios, adquira os recursos humanos, financeiros e outros necessários e seja responsável pelo seu sucesso ou fracasso (Hisrich 2011); e qualquer pessoa que organize e/ou gere recursos sob a forma de uma empresa não agrícola auto-contabilidade, e assume uma quantidade significativa de risco associado à participação de capital nessa empresa (McClelland 1990). Estas definições completas partilham atributos como negócio, iniciativa, gestão, tomada de decisão, risco e empreendedorismo, por outro lado, pode ser definido como a capacidade de identificar e gerar ideias de negócio competitivas, usar recursos, organizar a produção, promover produtos ou serviços, gerir riscos e trabalhar continuamente para o crescimento e excelência do negócio.

A palavra competência também tem vários significados como suficiência para satisfazer os desejos da vida (<http://dictionary.reference.com/browse/entrepreneur>); A qualidade de ser adequado ou fisicamente e intelectualmente qualificado (<http://www.thefreedictionary.com/competency>); a capacidade de aplicar um conjunto de conhecimentos, competências e habilidades relacionados para desempenhar com sucesso funções ou tarefas num ambiente de trabalho definido (Modelo de Competência Empresarial 2010); capacidade, que ocorre numa pessoa que conduz a comportamentos que atendam às exigências do trabalho dentro dos limites do ambiente organizacional, que por sua vez produz os resultados desejados (Boyatzis 1982); e a soma de experiências, conhecimentos, competências e atitude que adquirimos durante a nossa vida para um desempenho eficaz numa tarefa ou trabalho (Kaur e Bains 2013). Todas estas definições referem-se à competência como uma capacidade/capacidade que serve de base para padrões de conhecimento e competências. Vale a pena referir que as competências se aplicam a todos os aspetos da vida, incluindo as competências de pós-graduação, competências profissionais, competências de gestão, etc. (Mitchelmore e Rowley 2010) e (Linton e Walsh 2013) podem ser revistas para discutir o significado do empreendedorismo e das competências.

No que diz respeito às competências empresariais, o foco deste documento, a revisão literária revela que artigos e artigos de investigação abordaram aqueles que utilizam diferentes termos como características, competências, características e qualidades (Modelo de Competência Empresarial 2010; McClelland 1987; David e Edward 2011; Abdullah et al. 2009; Badal 2014; 2011; 2013; Brinckmann 2008; Mitchelmore e Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell 2008; Homem de 2006; Tiago 2011; Anne 2011; Shukla 2009; Wu 2009; Açúcares 2014; Prats et al. 2009; Quadro político do empreendedorismo UNCTAD 2012; O Programa Empretec: O Guia do Empreendedor 2015; O Conselho Nacional Canadano de Investigação Empresarial). O número de competências quantificadas varia de 5 (McClelland 1987; David e Edward 2011; Abdullah et al. 2009; Badal 2014; 2011) a 7 (Kaur et al. 2013), 10 (Brinckmann 2008; Mitchelmore e Rowley 2013; Brinckmann 2007; Pofeldt 2014; Chell 2008; Homem de 2006; Tiago 2011), 12 (Anne 2011), 13 (McClelland 1987), 15 (Modelo de Competência de Empreendedorismo 2010; Shukla 2009), 23 (Wu 2009) e até 25 (McClelland 1987). A maioria tem competências como paixão, assumindo riscos, confiança, determinação, disciplinada, visionária, tomada de decisão e liderança. Além disso, outros investigadores classificaram competências em competências empresariais fundamentais (ou níveis/camadas/clusters/níveis) em vez de lidarem com competências individuais. Estas competências-chave propostas variam de 2 a 9 categorias (Boyatzis 1982) identificaram traços de negócio e motivos de negócio, enquanto (Sugars 2014) perceberam fatores psicológicos, educação e experiência. A categoria de três tipos é identificada como competências atyrua, comportamentais e de gestão (Mitchelmore e Rowley 2010); realizações/resultados: orientação, criação interpessoal e de equipa e abordagem empresarial (Prats et al. 2009; Quadro de Política de Empreendedorismo da UNCTAD 2012); O Programa Empretec: O Guia do Empreendedor 2015; competências pessoais, interpessoais e empresariais (O Conselho Nacional de Empreendedorismo e Investigação do Canadá http://www.nrc-cnrc.gc.ca/eng/careers/behavioural_competencies/entrepreneurship_competency.html). Os modelos em quatro categorias incluem: conhecimento, motivação, competências/qualidades e características (Driessen

2005); realização, poder pessoal, planeamento e construção de relacionamentos (Smith e Shankar 2015). A categoria de cinco níveis é proposta por (Açúcares 2014) que compreende: auto-mentalidade, perspectiva de gestão, atitude de proprietário/líder, investidor empreendedor e verdadeiro empreendedor. Além disso, (Modelo de Competência de Empreendedorismo 2010) propõe uma competência de empreendedorismo em seis camadas que inclui competências pessoais, académicas, de trabalho, técnicas e de gestão do sector industrial e competências de ocupação específicas. O modelo de estrutura de sete categorias de covariância é proposto para testar a intenção de negócios entre os estudantes de engenharia do MIT (I'tjel e Franke 2003). Este modelo inclui parâmetros-chave como comportamento de negócio, intenção de negócios, propensão para a tomada de risco, lugar de controlo, atitudes em relação ao empreendedorismo, percepção do contexto e passado pessoal. Além disso, o modelo de nove competências proposto por (The Competen Model Development and Use: A Technical Assistance Guide 2015) inclui a eficiência pessoal, académica, de trabalho, áreas de empreendedorismo técnico, foco de negócio, e os restantes níveis representam a especialização que ocorre dentro de profissões específicas dentro de uma indústria. Todas estas categorias incluem componentes como pessoal, realização, planeamento, poder e académicos explicitamente ou implicitamente.

Neste artigo, o autor pretende rever o estatuto de empreendedorismo palestino e várias iniciativas. O segundo objetivo é propor software baseado numa construção suave que possa prever a qualidade das principais características e competências de negócio de um empreendedor. Este software proposto baseia-se no modelo de três clusters que foi desenvolvido e implementado com sucesso pela Empretec (Driessen 2005; Smith e Shankar 2015) em dezenas de países em todo o mundo ao longo das três décadas.

Após esta breve introdução, o documento é organizado da seguinte forma: a secção "Revisão da Literatura" examina os estudos relevantes que abordaram o problema da modelação de competências empresariais. A secção "Métodos" apresenta brevemente a metodologia utilizada. Segue-se uma breve apresentação do estatuto de empreendedorismo palestino. A secção "Modelo Proposto" introduz as várias técnicas de modelação softcomputing e introduz o modelo SKECM proposto. Embora os resultados e discussões sejam discutidos na secção "Resultados e Discussões", a conclusão e o trabalho adicional são apresentados na secção "Conclusões".

CONCLUSÃO

A Palestina tem assistido a iniciativas e programas ativos relacionados com o empreendedorismo. As principais características destas iniciativas são as que levantam a questão da sustentabilidade, as organizações não governamentais informais hospedadas em vez da oferta formal das universidades. A qualidade destes programas e a qualidade das competências de empreendedorismo adquiridas nunca foram avaliadas. Chegou o momento de os institutos palestinos de ensino superior seguirem a tendência emergente de fornecer cursos e programas formais de empreendedorismo. É seguro, será um passo essencial para dotar a comunidade de empresários e empregadores que irão criar emprego e, assim, impulsionar a situação económica.

Foi desenvolvido um modelo SKECM baseado na construção suave para prever cada KEC e competências agrupadas de acordo com os seus comportamentos associados individuais que são tratados como caixas negras. Foi igualmente conseguida uma avaliação global das competências empresariais na terceira fase do modelo SKECM. Os diferentes comportamentos adotados, dez CIC e três clusters são fornecidos pela Empretec. A validação destes modelos foi conseguida gerando aleatoriamente 250 conjuntos de dados. Utilizando o algoritmo de validação cruzada, os conjuntos de dados gerados foram divididos em conjuntos de dados de treino e verificação. Foram utilizadas três medidas para validar a adequação e a exatidão destes modelos: MAPE, CC e MPE. Os principais valores obtidos mape, CC e MPE são 0,8511, 0,9996 e 6,3175, respectivamente. Estes valores consistentes sugerem o potencial, adequação e adequação da abordagem softcomputing para avaliar e prever as principais competências empresariais e competências empresariais globais no domínio do empreendedorismo.

O modelo SKECM desenvolvido será proposto para avaliar ou avaliar a qualidade das competências empresariais adquiridas com os vários programas de formação empresarial.

Por conseguinte, o estudo de investigação futuro centrar-se-á na validação destes modelos com dados realistas em comparação. Este passo é essencial para afinar os modelos antes de indicar a adequação da aplicação da abordagem softcomputação ao campo do empreendedorismo. Além disso, para ter sucesso no negócio, é essencial integrar modelos KEC ao longo do processo de planeamento de negócios que inclui várias tarefas de planeamento, tais como introdução, descrição do negócio, descrição do produto e serviço, clientes, concorrência, localização, preços, marketing, pessoal chave, material e fontes de oferta, manufatura e produção, previsão de vendas, previsão de resultados, previsão e apresentação de cash flow. Além disso, os modelos KEC merecem ser integrados com inovação e start-ups empresariais.